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CONSULTATION AND COORDINATION

HISTORY OF PUBLIC INVOLVEMENT

A notice of intent to prepare a general management plan and environmental impact statement was published on July 18, 1996, in the *Federal Register* (volume 61, number 139, page 37494). At that time, a press release was distributed to local media, and newsletter 1 was published and distributed to the park mailing list. The newsletter contained information on the function of a general management plan, draft statements of the park purpose and significance, information on the planning team and the process for planning, and methods available to the public for communicating with the team and participating in the planning effort.

A public scoping meeting was held July 24, 1996, in the auditorium at the National Zoo. About 100 people attended and 35 spoke.

Based on discussions at the scoping meeting, the planning team hosted two focus group meetings at the Rock Creek Nature Center and Planetarium. One was on September 17, 1996, with representatives of three area bicycling organizations. The second was on September 18 with representatives of seven environmental organizations. In October 1996, members of the planning team attended a presentation on the history of planning and design for Rock Creek Park hosted by the Committee of 100 for the Capital City, an organization of professional planners and designers in Washington, D.C.

During early scoping, the superintendent and park staff met with District of Columbia congressional representatives Norton and Morella, the Mayor's Office, and 15 Advisory Neighborhood Commissions (ANC) to inform them of the planning project and to discuss their concerns for the future of the park.

Focus group meetings were held on October 22, 1996, at the Metropolitan Washington Council of Governments headquarters with representatives of regional transportation and air quality agencies. A second set of meetings was held on February 2, 1997, with air quality and transportation agencies. The purposes of the meetings were to inform the agencies of the planning effort, inquire about sources of information pertinent to planning, share public scoping comments received to date, and discuss the insights and concerns of the agencies regarding their fields of expertise and potential environmental effects.

Public comments received during early scoping tended to focus on management of traffic through the park and the idea of returning the park to more natural conditions. In response, the NPS planning team prepared a range of four "preliminary alternative scenarios," characterizing four potential management directions for the park for public comment. The scenarios ranged from continuing current management to extensive closures of roads and removal of recreation facilities to return the park to a more wilderness-like state. The scenarios were published in newsletter 3, which also included a postage-free response form. The newsletter was distributed to about 1,500 agencies, organizations, and individuals; area libraries; and internet (<http://www.nps.gov/rocr/gmpnewsletter3>).

Public open house meetings were held in conjunction with newsletter 3 at the Rock Creek Nature Center and Planetarium on June 25 and June 28, 1997. About 800 people attended the open houses. Planning team members and other park staff hosted the open house meetings to talk directly with people about the planning project and to hear their ideas and concerns. Comments were recorded on response forms, flip charts, and through interviews. A court reporter was provided at the open houses.

Approximately 1,000 comments on the preliminary alternative scenarios were received during the official review period that ended August 1, 1997. The range of comments was summarized in newsletter 4 (<http://www.nps.gov/rocr/gmpnewsletter4>) published in January 1998. Public views varied widely about the management of park roads, but there was nearly universal opposition to closing the community gardens, the public horse stables, and the golf course in the park.

After the official review period ended, additional letters, email, and post cards were received. The large majority of these supported "Alternative 2½," a recommendation developed by a new coalition of organizations entitled People's Alliance for Rock Creek (see Alternative C in this document).

Newsletter 5 was published in June 1998 to inform the public of a schedule extension for producing the plan. The newsletter also announced that new alternatives were being developed that did not include closing traditional recreation facilities. The recent discovery in the park of a federally endangered amphipod was also announced.

In November 1998, a letter was sent to everyone on the mailing list announcing an indefinite delay in the production of the draft general management plan and environmental impact statement. The delay was caused by a congressionally directed reorganization and downsizing of NPS planning, design, and construction programs and personnel.

In January 2001, the mayor of Washington, D.C. sent a letter to the National Park Service suggesting that a new alternative be developed to implement weekday vehicular traffic restrictions on sections of upper Beach Drive in non-rush hour periods. A copy of this letter is included in appendix D. As described in the "Formulation of Alternatives" section, this led to the development of Alternative D, Mid-Weekday Recreation Enhancement.

///Jan Snyder note: Delete next paragraph and add "Next Steps"?

Work on the plan was restarted in early 2001. This document, *Rock Creek Park/Rock Creek and Potomac Parkway General Management Plan/Environmental Impact Statement*, is on review for 90 days following publication of notification in the *Federal Register*. This review period will include open houses to obtain public comments and concerns. Comments can also be made in writing to the street address or e-mail address provided on the inside front cover. A final general management plan and environmental impact statement will then be prepared and a record of decision will be issued.

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Adler & Robin Books, Inc.	Carter Barron Community	D.C Historic Preservation
Advisory Neighborhood	Task Force	Office
Commissions, Members of	Cary Ridder & Associates	D.C. Bicycle Coordinator
American Automobile Assoc.	Chesapeake & Potomac Re-	D.C. Dept. of Public
American Recreation Coali-	gional Alliance	Works
tion	Chesapeake Bay Foundation	D.C. Dept. of Recreation
American Rivers	Chesapeake Bay Program	D.C. Dept. of Recreation
Arnold & Porter	Office, NPS	Office of Planning &
Art Barn Association	Chevy Chase Citizens	Policy
Audubon Naturalist Society	Assoc.	D.C. Engineering Ser-
Audubon Naturalist Society	Chronicle of Higher Educa-	vices.
of Central Atlantic States	tion, The	D.C. Natural Heritage
Auto Free D.C.	Coffin & Coffin	Program
Barton-Aschman Associates,	Committee for Children	D.C. Office of Planning
Inc.	Committee of 100, Members	D.C. Office of Tourism &
BFI Company	of	Promotion
Blair Road Garden Associa-	Council of D.C., Members of	D.C. Sewer Services
tion	Council of Governments	D.C. Water Resources
Boston House, The	Transportation Planning	Management
Boy Scouts of America (80)	Board	D.C., Dept of Planning

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DC, Office of Policy & Plan- ning	Kalorama Citizen's Associa- tion	National Capital Planning Commission
Defenders of Wildlife	League of American Bicy- clists	National Park Foundation
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Exotic Pest Plant Council	Mamie D. Lee Garden Association	National Trust for Historic Preservation
Federal Highway Administra- tion	Maryland Dept. of Natural Resources	National Wildlife Federa- tion
Fillmore Art Center	Maryland Native Plant Soci- ety	National Zoological Park
Fine Arts Commission	MD Dept. of Housing & Comm. Dev., MD Hist. Trust	Nature Conservancy, The
Fort Reno Garden Associa- tion	MD Dept. of the Env., Tech. & Reg. Serv. Admin.	New Columbia Audubon Society
Fort Stevens Garden Associa- tion	MD Dept. of Transportation	New Columbia Coalition, MD Native Plant Soci- ety
Francis Scott Key Foundation	MD National Capital Park & Planning Commission	News Channel 8
Friends of Meridian Hill	MD Office of Planning	Northwest Side Story
Friends of Peirce Mill	MD. National Capital Park & Planning Comm.	NOVA Lighting Co., Inc.
Friends of Rose Park	Meadowbrook Riding Sta- bles	Oak Hill Cemetery
Friends of the Earth	Medlantic Healthcare Group	Oakcrest School
Gallaudet Research Institute	Melvin Hazen Comm Gar- den Assoc	Parsons Transporation Group
Gateway Gerogewon Con- dominium Assoc.	Metro Washington Council of Governments	Pascal & Weiss
Georgetown Univ. Law Ctr./Inst. for Public Rep.	Mont. Cty. Dept. of Park & Planning Comm. (NR)	Peabody Garden Associa- tion
Girl Scout Council of the Na- tion's Capital	Montgomery County Dept. of Park & Planning	Potomac Appalachian Trail Club
Glover Archbold Garden As- sociation	Montgomery County Dept. of Permitting Services	Rabbi Emeritus, Adas Is- rael Synagogue
Glover Park Citizens' Assoc., Inc.	Montgomery County Parks- Eastern Area	Rivendell Assoc.
Golf Course Specialists Inc. E. Potomac Park	Montgomery Cty. Dept. of Env. Protection	Robert & Quigg Attorneys & Counselors
Green Peace	Montgomery Cty. Dept. of Park & Planning	Rock Creek Garden Assoc.
Harkins Conningham	Montgomery Cty. National Capital Park & Planning	Rock Creek Park Golf Course
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Honorable Constance Mo- rella		Sierra Club Legal Defense Fund
Honorable Eleanor Holmes Norton		State Resource Strategies Committee of 100
Humane Society of D.C.		Temple Shalom
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Inst. for Public Rep., George- town Univ. Law Ctr.		

Trail Riders of Tomorrow
(TROT) - 50
U.S. Naval Observatory
U.S. Secret Service
University of the D.C., Water
Resources Center
US Environmental Protection
Agency
USDA, Cooperative Extension
(NRCS)
USGS, Biological Res. Div.

Walter Reed Army Medical
Ctr.
Washington Area Bicycle
Assoc.
Washington Metro. Area
Transit Authority
Washington Post
Washington Regional Network
for Livable Community

Washington Tennis Foundation
Washington Times
Whitehaven Garden
Assoc.
Woodland Normanstone
Neighborhood Assoc.
Woodrow Wilson Bridge
Center

EMBASSIES

Embassy of Algeria
Embassy of Argentine
Embassy of Australia
Embassy of Austria
Embassy of Bahamas
Embassy of Bangladesh
Embassy of Barbados
Embassy of Belgium
Embassy of Belize
Embassy of Bolivia
Embassy of Bruneidarussalm
Embassy of Burkina Faso
Embassy of Canada
Embassy of Cape Verde
Embassy of Chile
Embassy Chile Military Mission
Embassy of Columbia
Embassy of Costa Rica
Embassy of Cyprus
Embassy of Czechoslovakia
Embassy of Denmark
Embassy of Djibouti
Embassy of Ecuador
Embassy of Egypt
Embassy of El Salvador
Embassy of Fiji
Embassy of France
Embassy of Germany
Embassy of Ghana
Embassy of Great Britain
Embassy of Greece
Embassy of Grenada
Embassy of Guatemala
Embassy of Guinea
Embassy of Guyana
Embassy of Haiti
Embassy of Honduras

Embassy of India
Embassy of Indonesia
Embassy of Ireland
Embassy of Israel
Embassy of Italy
Embassy of Japan
Embassy of Jordan
Embassy of Kenya
Embassy of Kuwait
Embassy of Latvia
Embassy of Lebanon
Embassy of Lesotho
Embassy of Liberia
Embassy of Luxembourg
Embassy of Madagascar
Embassy of Malaysia
Embassy of Malta
Embassy of The Marshall Island
Embassy of Mauritius
Embassy of Mexico
Embassy of Mongolia
Embassy of Morocco
Embassy of Mozambique
Embassy of Nepal
Embassy of New Zealand
Embassy of Nicaragua
Embassy of Niger
Embassy of Nigeria
Embassy of Norway
Embassy of Oman
Embassy of Pakistan
Embassy of Panama
Embassy of Papua New Guinea
Embassy of Paraguay
The Peoples Republic of China
Embassy of Peru
Embassy of Portugal

The Republic of Surinam
Embassy of Romania
Embassy of Rwanda
Embassy of Saudi Arabia
Embassy of Senegal
Embassy of Singapore
Embassy of South Africa
Embassy of Spain
Embassy of Sri Lanka
Embassy of Sudan
Embassy of Sweden
Embassy of Switzerland
Embassy of Syria
Embassy of Tanzania
The Central African Republic
Embassy of Dominican Republic
Federated States of Micronesia
Embassy of The Gambia
Islamic Republic of Mauritania
Embassy of Kingdom of Swaziland
Lao People's Dem. Republic
Embassy of The Netherlands
Peoples Republic of Mozambique
Embassy of The Philippines
Embassy of Republic of Benin
Embassy of Republic of Cameroon

Embassy Republic of Cape Verde
Embassy Republic of Hungary
Embassy of Republic of Mali

Embassy of Republic of Namibia
Embassy of Russian Federation
Embassy of State of Bahrain
Embassy of Togo

Embassy of Tunisia
Embassy of Turkey
Embassy of Uruguay
Embassy of Venezuela
Embassy of Zimbabwe

LIBRARIES

Chevy Chase Library
Cleveland Park Library
Georgetown Library
Juanita E. Thornton-Shepherd Park Library
Langston Community Library

Library of Congress
Martin Luther King, Jr. Memorial Library
Mt. Pleasant Library
Northeast Library
Petworth Library

Tenley-Friendship Library
Watha T. Daniel/Shaw Library
Woodridge Library

SCHOOLS

Adams Elementary School
Annunciation School
Bancroft Elementary School
Banneker Senior High School
Barnard Elementary School
Bell Multicultural High School
Blessed Sacrament School
Brightwood Elementary School
Bruce-Monroe Elementary School
Capitol Hill Day School
Cardozo Elementary School
Clark Elementary School
Clayton Singleton, Principal
Cook J.F. Elementary School
Cooke, H.D. Elementary School
Coolidge Community School
Coolidge Elementary School
Deal Junior High School
Discovery Creek Children's Museum of Washington
Dunbar Elementary School
Eaton Elementary School
Edmond Burke School
Edmund Burke School
Ellington School of the Arts
Env. Awareness Group, Nat'l Cathedral School
Francis Junior High School

Gage-Eckington Elementary School
Garnet-Patterson Middle School
Georgetown Day School
Georgetown Univ. Law Ctr./Inst. for Public Rep.
Georgetown Visitation Preparation School
Gonzaga College High School
Hardy Middle School
Holton Arms School
Holy Redeemer School
House of Rep. Page School
Hurst Elementary School
Hyde Elementary School
Sr. Donna Marie Coward, RSM
Janney Elementary School
Key Elementary School
Lafayette Elementary School
Lewis Elementary School
Lincoln Junior High School
Lowell School
MacFarland Junior High School
Mann Elementary School
Maret School
Meyer Elementary School
Montgomery Elementary School
Murch Elementary School

Nannie Helen Burroughs School
National Cathedral School
National Presbyterian School
Nativity Catholic Academy
Nat'l. Cathedral Elem. School/Beauvoir
Northwestern University
Our Lady of Victory School
Oyster Elementary School
Park View Elementary School
Parkmont School
Paul Junior High School
Powell Elementary School
Rabaut Junior High School
Raymond Elementary School
Reed Community School
Reed L.C. Elementary School
Roosevelt Adult Ed. Ctr.
Roosevelt Elementary School
Ross Elementary School
Rudolph Elementary School
Sacred Heart School
School Without Walls
Seaton Elementary School

Sharpe Health School	Stevens Elementary School	Walker-Jones Elementary School
Shaw Community School	Stoddert Elementary School	Washington Ethical High School
Shaw Junior High School	Takoma Community School	Washington International School
Shepherd Elementary School	Takoma Elementary School	Washington International School
Sheridan School	Terrell, R.H. Junior High School	Washington International School
Sidwell Friends School	The Field School	Washington International School
Sidwell Friends School	The Kingsbury Day School	Washington M.M. Elementary School
Slater-Langston Elementary School	The Lab School of Washington	West Elementary School
St. Ann's Academy	Thompson Elementary School	Whittier Elementary School
St. Augustine School	Truesdell Elementary School	Wilson W. Elementary School
St. Gabriel's School	Tubman Elementary School	
St. Patrick's Episcopal Day School	University of the D.C.	
St. John's Collee Middle School		

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APPENDIX A: LEGISLATION

THE ROCK CREEK PARK AUTHORIZATION

FIFTY-FIRST CONGRESS. SESS. I. CH. 1001. 1890.

September 27, 1890.	CHAP. 1001. —An act authorizing the establishing of a public park in the District of Columbia.
District of Columbia.	<i>Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,</i> That a tract of land
Rock Creek Park established.	lying on both sides of Rock Creek, beginning at Klinge Ford Bridge, and running northwardly, following the course of said creek, of a
Location.	width not less at any point than six hundred feet, nor more than
Description.	twelve hundred feet, including the bed of the creek, of which not less than two hundred feet shall be on either side of said creek, south of
	Broad Branch road and Blagden Mill road and of such greater width north of said roads as the commissioners designated in this act may
Dedication.	select, shall be secured, as hereinafter set out, and be perpetually
Proviso.	dedicated and set apart as a public park or pleasure ground for the benefit and enjoyment of the people of the United States, to be known by the name of Rock Creek Park: <i>Provided, however,</i> That the
Maximum size and cost.	whole tract so to be selected and condemned under the provisions of this act shall not exceed two thousand acres nor the total cost thereof
Commission to be appointed.	exceed the amount of money herein appropriated.
	SEC. 2. That the Chief of Engineers of the United States Army, the Engineer Commissioner of the District of Columbia, and three
Duties.	citizens to be appointed by the President, by and with the advice and consent of the Senate, be, and they are hereby, created a commission
Executive officer.	to select the land for said park, of the quantity and within the limits aforesaid, and to have the same surveyed by the assistant to the said Engineer Commissioner of the District of Columbia in charge of
	public highways, which said assistant shall also act as executive officer to the said commission.
	SEC. 3. That the said commission shall cause to be made an accurate map of said Rock Creek Park, showing the location, quantity, and character of each parcel of private property to be taken for such
Map to be filed.	purpose, with the names of the respective owners inscribed thereon, which map shall be filed and recorded in the public records of the
Condemnation.	District of Columbia, and from and after the date of filing said map the several tracts and parcels of land embraced in said Rock Creek
Title.	Park shall be held as condemned for public uses, and the title thereof vested in the United States, subject to the payment of just compensation,
Compensation.	to be determined by said commission, and approved by the President of the United States: <i>Provided,</i> That such compensation
Proviso.	be accepted by the owner or owners of the several parcels of land.
Acceptance by owners.	That if the said commission shall be unable by agreement with the respective owners to purchase all of the land so selected and
Failure to agree.	condemned within thirty days after such condemnation, at the price approved by the President of the United States, it shall, at the expiration of such period of thirty days, make application to the supreme
Judicial procedure.	court of the District of Columbia, by petition, at a general or special term, for an assessment of the value of such land as it has been
Application for assessment.	unable to purchase.
Petition and map.	Said petition shall contain a particular description of the property selected and condemned, with the name of the owner or owners thereof, if known, and their residences, as far as the same may be
	ascertained, together with a copy of the recorded map of the park; and the said court is hereby authorized and required, upon such application, without delay, to notify the owners and occupants of the
Notification.	land, if known, by personal service, and if unknown, by service by publication, and to ascertain and assess the value of the land so
Appraisal commission.	selected and condemned, by appointing three competent and disinterested commissioners to appraise the value or values thereof, and
Ascertainment of value.	to return the appraisement to the court; and when the value or values of such land are thus ascertained, and the President of the
Payment.	United States shall decide the same to be reasonable, said value or values shall be paid to the owner or owners, and the United States
Title.	shall be deemed to have a valid title to said land; and if in any case

the owner or owners of any portion of said land shall refuse or neglect, after the appraisement of the cash value of said lands and improvements, to demand or receive the same from said court, upon depositing the appraised value in said court to the credit of such owner or owners, respectively, the fee-simple shall in like manner be vested in the United States.

SEC. 4. That said court may direct the time and manner in which possession of the property condemned shall be taken or delivered, and may, if necessary, enforce any order or issue any process for giving possession.

SEC. 5. That no delay in making an assessment of compensation, or in taking possession, shall be occasioned by any doubt which may arise as to the ownership of the property, or any part thereof, or as to the interests of the respective owners. In such cases the court shall require a deposit of the money allowed as compensation for the whole property or the part in dispute. In all cases as soon as the said commission shall have paid the compensation assessed, or secured its payment by a deposit of money under the order of the court, possession of the property may be taken. All proceedings hereunder shall be in the name of the United States of America and managed by the commission.

SEC. 6. That the commission having ascertained the cost of the land, including expenses, shall assess such proportion of such cost and expenses upon the lands, lots, and blocks situated in the District of Columbia specially benefited by reason of the location and improvement of said park, as nearly as may be, in proportion to the benefits resulting to such real estate.

If said commission shall find that the real estate in said District directly benefited by reason of the location of the park is not benefited to the full extent of the estimated cost and expenses, then they shall assess each tract or parcel of land specially benefited to the extent of such benefits as they shall deem the said real estate specially benefited. The commission shall give at least ten days' notice, in one daily newspaper published in the city of Washington, of the time and place of their meeting for the purpose of making such assessment and may adjourn from time to time till the same be completed. In making the assessment the real estate benefited shall be assessed by the description as appears of record in the District on the day of the first meeting; but no error in description shall vitiate the assessment: *Provided*, That the premises are described with substantial accuracy. The commission shall estimate the value of the different parcels of real estate benefited as aforesaid and the amount assessed against each tract or parcel, and enter all in an assessment book. All persons interested may appear and be heard. When the assessment shall be completed it shall be signed by the commission, or a majority (which majority shall have power always to act), and be filed in the office of the clerk of the supreme court of the District of Columbia. The commission shall apply to the court for a confirmation of said assessment, giving at least ten days' notice of the time thereof by publication in one daily newspaper published in the city of Washington, which notice shall state in general terms the subject and the object of the application.

The said court shall have power, after said notice shall have been duly given, to hear and determine all matters connected with said assessment; and may revise, correct, amend, and confirm said assessment, in whole or in part, or order a new assessment, in whole or in part, with or without further notice or on such notice as it shall prescribe; but no order for a new assessment in part, or any partial adverse action, shall hinder or delay confirmation of the residue, or collection of the assessment thereon. Confirmation of any part of the assessment shall make the same a lien on the real estate assessed.

Possession.
Process.

No delay in assessment, etc.

Disputed claims.

Possession.

Proceedings.

Proportionate assessment of cost, etc., on benefited lands.

Notice by publication.

Adjournments of commission.

Record description.

Errors.

Provided.

Substantial accuracy.

Entries in assessment book.
Hearings.
Commission to file assessment.

Application for confirmation.

Notice.

Powers of court in determining, etc.

Confirmation.

Lien.

Payment of assessment by installments, etc.	The assessment, when confirmed, shall be divided into four equal installments, and may be paid by any party interested in full or in one, two, three, and four years, on or before which times all shall be payable, with six per centum annual interest on all deferred payments. All payments shall be made to the Treasurer of the United States, who shall keep the account as a separate fund. The orders of the court shall be conclusive evidence of the regularity of all previous proceedings necessary to the validity thereof, and of all matters recited in said orders. The clerk of said court shall keep a record of all proceedings in regard to said assessment and confirmation. The commission shall furnish the said clerk with a duplicate of its assessment book, and in both shall be entered any change made or ordered by the court as to any real estate. Such book filed with the clerk when completed and certified shall be prima facie evidence of all facts recited therein. In case assessments are not paid as aforesaid the book of assessments certified by the clerk of the court shall be delivered to the officer charged by law with the duty of collecting delinquent taxes in the District of Columbia, who shall proceed to collect the same as delinquent real estate taxes are collected. No sale for any installment of assessment shall discharge the real estate from any subsequent installment; and proceedings for subsequent installments shall be as if no default had been made in prior ones.
Interest.	
Separate Treasury fund.	
Validity of proceedings.	
Court record.	
Duplicate assessment book to be filed.	
Evidence of recited facts.	
Delinquent assessments.	
Collection.	
Payment of compensation by Treasurer.	All money so collected may be paid by the Treasurer on the order of the commission to any persons entitled thereto as compensation for land or services. Such order on the Treasurer shall be signed by a majority of the commission and shall specify fully the purpose for which it is drawn. If the proceeds of assessment exceed the cost of the park the excess shall be used in its improvement, under the direction of the officers named in section eight, if such excess shall not exceed the amount of ten thousand dollars. If it shall exceed that amount that part above ten thousand dollars shall be refunded ratably. Public officers performing any duty hereunder shall be allowed such fees and compensation as they would be entitled to in like cases of collecting taxes. The civilian members of the commission shall be allowed ten dollars per day each for each day of actual service. Deeds made to purchasers at sales for delinquent assessments hereunder shall be prima facie evidence of the right of the purchaser, and any one claiming under him, that the real estate was subject to assessment and directly benefited, and that the assessment was regularly made; that the assessment was not paid; that due advertisement had been made; that the grantee in the deed was the purchaser or assignee of the purchaser, and that the sale was conducted legally.
Commission orders.	
Proceeds in excess of cost.	
Compensation of public officers.	
Compensation of civilian commissioners.	
Delinquent assessment sale deeds.	
Evidence of.	
Judgment of sale.	Any judgment for the sale of any real estate for unpaid assessments shall be conclusive evidence of its regularity and validity in all collateral proceedings except when the assessment was actually paid, and the judgment shall estop all persons from raising any objection thereto, or to any sale or deed based thereon, which existed at the date of its rendition, and could have been presented as a defense to the application for such judgment.
Estoppel, etc.	
Appropriation. For total cost, etc.	To pay the expenses of inquiry, survey, assessment, cost of lands taken, and all other necessary expenses incidental thereto, the sum of one million two hundred thousand dollars, or so much thereof as may be necessary, is hereby appropriated out of any money in the Treasury not otherwise appropriated: <i>Provided</i> , That one-half of said sum of one million two hundred thousand dollars, or so much thereof as may be expended, shall be re-imbursed to the Treasury of the United States out of the revenues of the District of Columbia, in four equal annual installments, with interest at the rate of three per centum per annum upon the deferred payments: <i>And provided further</i> , That one-half of the sum which shall be annually appropriated and expended for the maintenance and improvement of said
<i>Proviso.</i> Half from the District revenues.	
Reimbursed in installments.	
Interest.	
Maintenance, etc. Half from District revenues.	

lands as a public park shall be charged against and paid out of the revenues of the District of Columbia, in the manner now provided by law in respect to other appropriations for the District of Columbia, and the other half shall be appropriated out of the Treasury of the United States.

SEC. 7. That the public park authorized and established by this act shall be under the joint control of the Commissioners of the District of Columbia and the Chief of Engineers of the United States Army, whose duty it shall be, as soon as practicable, to lay out and prepare roadways and bridle paths, to be used for driving and for horseback riding, respectively, and footways for pedestrians; and whose duty it shall also be to make and publish such regulations as they deem necessary or proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, animals, or curiosities within said park, and their retention in their natural condition, as nearly as possible.

Control, etc., of park.

Regulations, etc.

Approved, September 27, 1890.

THE ROCK CREEK AND POTOMAC PARKWAY AUTHORIZATION

(From the Public Buildings Act of March 4, 1913)

SEC. 22. That for the purpose of preventing the pollution and obstruction of Rock Creek and of connecting Potomac Park with the Zoological Park and Rock Creek Park, a commission, to be composed of the Secretary of the Treasury, the Secretary of War, and the Secretary of Agriculture, is hereby authorized and directed to acquire, by purchase, condemnation, or otherwise, such land and premises as are not now the property of the United States in the District of Columbia shown on the map on file in the office of the Engineer Commissioner of the District of Columbia, dated May seventeenth, nineteen hundred and eleven, and lying on both sides of Rock Creek, including such portion of the creek bed as may be in private ownership, between the Zoological Park and Potomac Park; and the sum of \$1,300,000 is hereby authorized to be expended toward the requirement of such land. That all lands now belonging to the United States or to the District of Columbia lying within the exterior boundaries of the land to be acquired by this act as shown and designated on said map are hereby appropriated to and made a part of the parkway herein authorized to be acquired. One-half of the cost of the said lands shall be reimbursed to the Treasury of the United States out of the revenues of the District of Columbia in eight equal annual installments, with interest at the rate of three per centum per annum upon the deferred payments. That should the commission decide to institute condemnation proceedings in order to secure any or all of the land herein authorized to be acquired, such proceedings shall be in accordance with the provisions of the act of Congress approved August thirtieth, eighteen hundred and ninety, providing a site for the enlargement of the Government Printing Office (United States Statutes at Large, volume twenty-six, chapter eight hundred and thirty-seven).

Washington, D. C.
Commission to acquire land adjoining Rock Creek to connect Zoological and Potomac Parks.

Amount authorized.

Public lands added.

One-half of cost from District revenue, in installments.

Condemnation proceedings.

Vol. 26, p. 412.

APPENDIX B: LAWS AND EXECUTIVE ORDERS

Laws and executive orders that apply to the management of Rock Creek Park and the Rock Creek and Potomac Parkway are provided below.

NATIONAL PARK SERVICE ENABLING LEGISLATION

Act of August 25, 1916 (National Park Service Organic Act), Public Law (P.L.) 64-235, 16 United States Code (U.S.C.) Section (§)1 *et sequens (et seq.* (and the following ones)) as amended

Reorganization Act of March 3, 1933, 47 Statute (Stat.) 1517

General Authorities Act, October 7, 1976, P.L. 94-458, 90 Stat. 1939, 16 U.S.C. §1a-1 *et seq.*

Act amending the Act of October 2, 1968 (commonly called Redwoods Act), March 27, 1978, P.L. 95-250, 92 Stat. 163, 16 U.S.C. Subsection(s) (§§) 1a-1, 79a-q

National Parks and Recreation Act, November 10, 1978, P.L. 95-625, 92 Stat. 3467; 16 U.S.C. §1 *et seq.*

OTHER LAWS AFFECTING NPS OPERATIONS

Accessibility

Americans with Disabilities Act, P.L. 101-336, 104 Stat. 327, 42 U.S.C. §12101

Architectural Barriers Act of 1968, P.L. 90-480, 82 Stat. 718, 42 U.S.C. §4151 *et seq.*

Rehabilitation Act of 1973, P.L. 93-112, 87 Stat. 357, 29 U.S.C. §701 *et seq.* as amended by the Rehabilitation Act Amendments of 1974, 88 Stat. 1617

Cultural Resources

American Indian Religious Freedom Act, P.L. 95-341, 92 Stat. 469, 42 U.S.C. §1996

Antiquities Act of 1906, P.L. 59-209, 34 Stat. 225, 16 U.S.C. §432 and 43 Code of Federal Regulations (CFR) 3

Archeological and Historic Preservation Act of 1974, P.L. 93-291, 88 Stat. 174, 16 U.S.C. §469

Archeological Resources Protection Act of 1979, P.L. 96-95, 93 Stat. 712, 16 U.S.C. §470aa *et seq.* and 43 CFR 7, subparts A and B, 36 CFR 79

National Historic Preservation Act as amended, P.L. 89-665, 80 Stat. 915, 16 U.S.C. §470 *et seq.* and 36 CFR 18, 60, 61, 63, 68, 79, 800

Protection of Historic and Cultural Properties, Executive Order (E.O.) 11593; 36 CFR 60, 61, 63, 800; 44 Federal Register (FR) 6068

Public Buildings Cooperative Use Act of 1976, P.L. 94-541, 90 Stat. 2505, 42 U.S.C. §4151-4156

Natural Resources

Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act, Environmental Statement Memorandum (E.S.) 80-3, 08/11/80, 45 FR 59109

Clean Air Act as amended, P.L. Chapter 360, 69 Stat. 322, 42 U.S.C. §7401 *et seq.*

Coastal Zone Management Act of 1972 as amended, P.L. 92-583, 86 Stat. 1280, 16 U.S.C. §1451 *et seq.*

Endangered Species Act of 1973, as amended, P.L. 93-205, 87 Stat. 884, 16 U.S.C. §1531 *et seq.*

Executive Order 11988: Floodplain Management, 42 FR 26951, 3 CFR 121 (Supplement (Supp) 177)

Executive Order 11990: Protection of Wetlands, 42 FR 26961, 3 CFR 121 (Supp 177)

Executive Order 11991: Protection and Enhancement of Environmental Quality

Federal Insecticide, Fungicide, and Rodenticide Act, P.L. 92-516, 86 Stat. 973, 7 U.S.C. §136 *et seq.*

Federal Water Pollution Control Act (commonly referred to as Clean Water Act), P.L. 92-500, 33 U.S.C. §1251 *et seq.* as amended by the Clean Water Act, P.L. 95-217

Fish and Wildlife Coordination Act of 1958 as amended, P.L. 85-624, 72 Stat. 563, 16 U.S.C. §661 *et seq.*

Manguson Fishery Conservation and Management Act of 1976, P.L. 94-625, 90 Stat. 331m 16 U.S.C. §1801 *et seq.*

Migratory Bird Conservation Act, P.L. Chapter 257, 45 Stat. 1222, 16 U.S.C. §715 *et seq.*

Migratory Bird Treaty Act of 1918, P.L. 186, 40 Stat. 755

National Environmental Policy Act of 1969, P.L. 91-190, 83 Stat. 852, 42 U.S.C. §4321 *et seq.*

National Park System Final Procedures for Implementing E.O. 11988 and 11990 (45 FR 35916 as revised by 47 FR 36718)

Protection and Enhancement of Environmental Quality, E.O. 11514 as amended, 1970, E.O. 11991, 35 FR 4247; 1977, 42 FR 26967)

Resource Conservation and Recovery Act, P.L. 94-580, 30 Stat. 1148, 42 U.S.C. §6901 *et seq.*

Rivers and Harbors Act of 1899, 33 U.S.C. Chapter 425, as amended by P.L. 97-332, October 15, 1982 and P.L. 97-449, 33 U.S.C. §§401-403

Water Resources Planning Act of 1965 (P.L. 89-80, 42 U.S.C. § 1962 *et seq.*) and Water Resource Council's Principles and Standards, 44 FR 723977

Watershed Protection and Flood Prevention Act, P.L. 92-419, 68 Stat. 666, 16 U.S.C. §100186

Other

Administrative Procedures Act, 5 U.S.C. § 551-559, §§701-706

Concessions Policy Act of 1965, P.L. 89-249, 79 Stat. 969, 16 U.S.C. § 20 *et seq.*

Department of Transportation Act of 1966, P.L. 89-670, 80 Stat. 931, 49 U.S.C. § 303

Energy Supply and Environmental Coordination Act of 1974

Executive Order 12003: Energy Policy and Conservation, 3 CFR 134 (Supp 1977), 42 U.S.C. § 2601

Executive Order 12008: Federal Compliance with Pollution Control Standards

Executive Order 12372: Intergovernmental Review of Federal Programs, 47 FR 30959

Forest and Rangeland Renewable Resources Planning Act, P.L. 95-307, 92 Stat. 353, 16 U.S.C. §1600 *et seq.*

Freedom of Information Act, P.L. 93-502, 5 U.S.C. §552 *et seq.*

Intergovernmental Cooperation Act of 1968, P.L. 90-577, 40 U.S.C. §§ 531-535 and 31 U.S.C. §§6501-6508

Intergovernmental Coordination Act of 1969, 42 U.S.C. §§4101, 4231, 4233

Noise Control Act of 1972 as amended, P.L. 92-574, 42 U.S.C. §4901 *et seq.*

Outdoor Recreation Coordination Act of 1963, P.L. 88-29, 77 Stat. 49

Payment in Lieu of Taxes Act, P.L. 94-565, 90 Stat. 2662, 31 U.S.C. §6901 *et seq.*

Surface Transportation Assistance Act of 1982, 96 Stat. 2097, 23 U.S.C. §§101 and many others

Wildfire Disaster Recovery Act, P.L. 101-286

APPENDIX C: RELATIONSHIP OF THE GENERAL MANAGEMENT PLAN TO OTHER PLANNING EFFORTS

OTHER NPS PLANNING EFFORTS

Rock Creek Park: A Report by Olmsted Brothers

The first and only previous comprehensive plan for the park was completed in 1918. The Olmsted Brothers firm, headed by landscape architect Frederick Law Olmsted, jr., was commissioned to prepare a report focusing on development and expansion of the park. The report supports protection of the park's natural values, analyzes the scenery, and includes an approach to divide the park into defined landscape units, based on native vegetation. While the report also proposed a system of park drives and thoroughfares as well as landscape treatments, most of the proposals were never implemented. However the plan provided an eloquent vision and philosophy for the management of the park which continue to guide the park today. The Olmsted report set the tone for the park in the opening sentences, stating:

The dominant consideration, never to be subordinated to any other purpose in dealing with Rock Creek Park, is the permanent preservation of its wonderful natural beauty and the making of that beauty accessible to the people without spoiling the scenery in the process.

This general management plan is intended to build on these early ideals and incorporate the direction of its philosophy, while adjusting for current park needs. For instance, some proposals by the Olmsted brothers were never implemented and are recognized today as designs for an earlier generation, not necessarily applicable for the contemporary needs of the public. Many issues facing the park today are not addressed in the 1918 plan. Nevertheless, this general management plan represents an approach based on the Olmsted philosophy of scenic preservation while integrating appropriate management measures to address the pressures and issues that have and will continue to arise in the park.

Rock Creek Tennis Stadium Management Plan

A separate plan and environmental impact statement was prepared in 1993 to address long-term management of the Rock Creek Park tennis center and associated recreation fields at Brightwood. Because the planning for the area was so recently completed, this Rock Creek Park and Rock Creek and Potomac Parkway general management plan did not revisit issues or propose alternatives related to the tennis stadium.

Park Comprehensive Interpretive Plan

A comprehensive interpretive plan is underway for the park to identify interpretive themes and strategies for interpretive programs. The plan is being prepared in concert with the general management plan and will complement the management direction of the final general management plan.

Civil War Defenses of Washington Management Plan

A separate management plan is being prepared for the Civil War Defenses of Washington, the city's circle of earthworks which includes Fort DeRussy. The long-term management of the fort will be developed in this Rock Creek Park general management plan and coordinated with the Civil War Defenses plan.

Park Studies and Action Plans

Several studies and plans have been completed for the park and are periodically updated. These include the

Historic Resource Study for Rock Creek (1990)

Park Resources Management Plan (draft 1996)

Statement for Management (1985)

Several cultural/historic properties administered by the staff of Rock Creek Park are outside of the geographical area of this general management plan (see "Geographic Area Covered by the General Management Plan"). Management objectives for these properties will continue to be developed on a site-by-site basis. Separate management plans may be developed for these properties at a future date. During 1996-1997, the following major studies were initiated relevant to these cultural/historic properties:

Historic Resource Study for Civil War Defenses of Washington.-This study will document the history of the Civil War forts and related sites that are within the administrative boundaries of Rock Creek Park and within other NPS jurisdictions in the National Capital Region. To be completed in 2002.

Cultural Landscape Report for Meridian Hill Park. Completed in 2001.

Cultural Landscape Report for Dumbarton Oaks Park. Completed in 2001.

Preservation Maintenance Plan for Dumbarton Oaks Park. Completed in 1997.

Other project requests are currently being developed, principal of which is a Historic Structures Report and Preservation Needs Assessment for Battleground National Cemetery.

Rock Creek Park Transportation/Safety Study

A special study of transportation in the park and surrounding streets was prepared as part of the planning process (Robert Peccia & Associates 1997; Robert Peccia & Associates *et al.* 1997). The study documented traffic patterns, examined safety, and measured air pollution and noise. As part of the process to thoroughly investigate traffic-related aspects of the park, a traffic model was developed to forecast traffic conditions in the area. Robert Peccia & Associates, a traffic engineering firm contracted by the park service, adapted and refined the MWCOC regional data to build the Rock Creek Park transportation model for the network of streets and roads around the park.

Traffic modeling was conducted for the alternatives considered in the draft general management plan. The environmental consequences section incorporates the findings of this study.

Implementation Plans

Listed below are plans and studies that would be developed or updated to implement the general management plan. Many of these plans and studies could occur as part of a park-wide resources management plan. This list is not exclusive or complete. It is intended to indicate work yet to occur over the 10 to 15 year life of the general management plan.

- Air quality monitoring plan
- Water resource management plan
- Integrated pest management plan
- Wildlife management plan
- Vegetation management plan
- Fire management plan
- Inventory of vegetation and wildlife
- Park-wide soils survey
- Cultural resource studies
 - Historic structure report, Pierce Mill Barn (Art Barn)
 - Historic structure report, Nature Center
 - Collections management plan for Pierce Mill
 - Cultural landscape report, Pierce Mill area
 - Cultural landscape report, Peirce-Klingling Mansion and the Linnaean Hill area
 - Cultural landscape report, historic trails
 - Design guidelines for Civil War fortifications (called for in the Fort Circle Parks Management Plan)
 - Park-wide archeological overview and assessment

NON-NPS PLANNING EFFORTS

District of Columbia Scenic Byways Program

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) authorized the National Scenic Byways Program. This program recognizes roads passing through corridors that are of great interest because they are "representative, unique, or irreplaceable" in regard to scenic, historic, natural, cultural, recreational, or archeological qualities. To be designated as a national scenic byway, a road must

- be a state-designated scenic byway (or federal land management agency designated with state concurrence)
- possess at least one of the six intrinsic qualities listed above
- have a completed corridor management plan
- accommodate two-wheel-drive passenger vehicles with standard clearances

where feasible, accommodate bicycles and pedestrians

National designation allows access to ISTEA funds for protection of the intrinsic qualities of the road and enhancement of the use of the road by visitors. This is beneficial to many communities and regions for economic development, encouragement of regional pride, and protection of the resources.

The first step toward national designation is designation as a scenic byway by the state or federal agency that manages the road. Beach Drive and the Rock Creek and Potomac Parkway were designated by the District of Columbia and National Park Service jointly in 1994. The National Park Service has been asked by the District of Columbia to seek national designation for these federally managed roads. However, the decision to seek national designation should follow logically from the overall vision and plan for the park. Therefore, the National Park Service will not take action toward national scenic byway designation pending the conclusion of the general management plan process.

Metropolitan Washington Council of Government, Department of Transportation Planning Vision Document

This document is being prepared by the MWCOG and is currently in draft form. The document outlines regional transportation policies, objectives, and strategies for metropolitan Washington, D.C. The policies advocate an intermodal transportation system that includes rail, bus, ridesharing, and bicycle and pedestrian improvements to reduce reliance on the single-occupant automobile. A complete description of the draft Vision Document is available on the internet at <http://www.mwcog.org/trans/newsdec.html>.

Bicycle Plan for the National Capital Region

The Metropolitan Washington Council of Governments' National Capital Regional Transportation Planning Board adopted the National Capital Region Bicycle Plan in July 1995. Although the plan does not call for bicycle improvements within Rock Creek Park, it does advocate improving major corridors near the park and extending the bike trail along Beach Drive from the district line to Maryland State Route 410 (East-West Highway).

Chesapeake Bay Program

Rock Creek is in the larger Chesapeake Bay watershed. On October 29, 1993, the National Park Service signed a memorandum of understanding with the Environmental Protection Agency and became a formal participant in the Chesapeake Bay Program, along with the District of Columbia and the states of Virginia, Maryland, and Pennsylvania. In part, this agreement calls for a commitment to implement a basin-wide plan or strategy to reduce nutrient inputs to the bay by 40 percent by the year 2000. In joining the program, the National Park Service agreed to contribute to the restoration, interpretation, and conservation of the many valuable resources of the Chesapeake Bay.

Comprehensive Plan for the National Capital

The District of Columbia Self-Government and Governmental Reorganization (Home Rule) Act of 1973 called for the District of Columbia and the National Capital Planning Commission (NCPC) to develop a comprehensive plan. The plan elements were adopted in 1984 and 1985 and address all aspects of governing the district. These include parks, open space, and natural features; economic development; housing; environmental protection; transportation; human services; and land use.

Extending the Legacy: Planning America's Capital for the 21st Century

The NCPC has released its new plan for Washington's Monumental Core. The plan presents a vision of what the National Mall and surrounding areas may look like in 50 to 100 years. While the plan does not address Rock Creek Park or surrounding neighborhoods, many of the areas along the Rock Creek and Potomac Parkway would be affected. The plan emphasizes providing access to the Potomac River waterfront, developing public open places, expanding public transportation opportunities, and redefining the network of roadways around the monumental core.

Montgomery County Master Plans and Maps

The master plans establish specific policy guidelines for land use, transportation, conservation, and open space and parks. The plans include Montgomery County and the Silver Spring and Bethesda/Chevy Chase planning areas adjacent to Rock Creek Park.

Strategic Transportation Plan for the District of Columbia (1997)

The Strategic Transportation Plan presents the district's vision for the city's transportation system. The plan advocates strategies to improve the efficiency of the current transportation system, reduce dependency on single occupancy vehicle use, intercept automobile traffic at the edges of the city, and provide residents and tourists alternatives to the automobile. The plan calls for bicycle paths along Beach Drive and Rock Creek and Potomac Parkway and identifies portions of the park as "gateway" areas.

District of Columbia Water and Sewer Authority Combined Sewer Area Stormwater Overflow Plan

In June 2001, the D.C. water and Sewer Authority presented a draft plan for a \$1-billion stormwater overflow system. The plan, which includes the area of combined sanitary/storm sewers east and south of Rock Creek Park (see the Sewerlines and Outfalls map) would reduce overflow discharges by more than 90 percent. The plan, which still needs financing and environmental approvals, would include half-mile-long tunnel along Rock Creek that would be able to store up to 5 million gallons of combined storm runoff and sewage for treatment. A formal hearing is tentatively scheduled for autumn 2001, and a final plan may be submitted to the U.S. Environmental Protection Agency in late 2001 or early 2002 (Engineering News-Record 2001).

**APPENDIX D: LETTER FROM THE MAYOR OF WASHINGTON, D.C.
REQUESTING ANOTHER ALTERNATIVE**

**APPENDIX D: LETTER FROM THE MAYOR OF WASHINGTON, D.C. REQUESTING
ANOTHER ALTERNATIVE**



ANTHONY A. WILLIAMS
MAYOR

Mr. Terry Carlstrom
Director, National Capital Region
National Park Service
1100 Ohio Drive
Washington, DC 20242

Dear Mr. Carlstrom:

The District is fortunate to have Rock Creek Park, one of the world's finest urban parks, located in the middle of our city. The park provides a welcome respite from the pressures of city life that in turn greatly enhances the livability of our city.

The value of Rock Creek Park to the residents of the Greater Washington region has been significantly improved by the National Park Service's decision in the 1980's to close portions of upper Beach Drive to automobile traffic on weekends. The weekend closure has allowed recreational use to flourish while maintaining adequate transportation needs to automobile drivers.

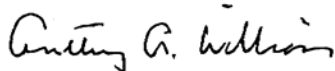
With a general management plan for Rock Creek Park currently under development, the Park Service now has an opportunity to make this park an even better resource for recreational opportunities and habitat protection. The District of Columbia government has been discussing with various citizen groups regarding the possibility of reducing automobile traffic in the most sensitive portions of Rock Creek Park, while minimizing any impact on surrounding neighborhoods and commuters.

I encourage the National Park Service to work with the surrounding neighborhoods to study the possibility of implementing weekday vehicular traffic restrictions on sections of upper Beach Drive in non-rush hour periods and to start a dialogue with the community to determine the best possible use for the park. It is of vital importance that any restrictions would need to be carefully coordinated between the National Park Service, the District government, and surrounding local governments and neighborhoods.

Mr. Terry Carlstrom
Page Two

The entire project would need to be carefully monitored by the National Park Service and the District government to assess the impacts of this program. If possible, such measures could be incorporated into the forthcoming Rock Creek Park General Management Plan. I have asked Mr. Dan Tangherlini, Acting Director of the Division of Transportation to serve as the District's representative to your offices on this proposed project. I thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Anthony A. Williams".

Anthony A. Williams
Mayor

APPENDIX E: FEDERAL AND STATE-LISTED SPECIAL-CONCERN SPECIES

TABLE E.1: FEDERALLY LISTED SPECIES IN ROCK CREEK PARK

Common Name	Scientific Name	Federal Status ^{a/}
CRUSTACEANS		
Hays amphipod	<i>Stygobromus hayi</i>	LE
BIRDS		
bald eagle	<i>Haliaeetus leucocephalus</i>	LT ^{b/}

a/ Federal status:

LE = Taxa listed as endangered; in danger of extinction throughout all or a significant portion of their range.

LT = Taxa listed as threatened; likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

b/ Bald eagle was proposed for delisting July 1999; delisting is still pending.

TABLE E.2: RARE PLANTS IN ROCK CREEK PARK ^{a/}

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Solitary pussytoes	<i>Antennaria solitaria</i>	--	--	S1
Hairy rockcress	<i>Arabis hirsuta</i>	--	--	SU
Green dragon	<i>Arisaema dracontium</i>	--	--	S3
Cornel-leaved aster	<i>Aster infirmus</i>	--	--	S3
Hairy-leaved sedge	<i>Carex hirtifolia</i>	--	--	S1
Chestnut	<i>Castanea dentata</i>	--	--	S2 S3
Whorled coreopsis	<i>Coreopsis verticillata</i>	--	--	S3
Dandy low kyllinga	<i>Cyperus tenuifolius</i>	--	E	S1
Pointed-leaved tick-trefoil	<i>Desmodium glutinosum</i>	--	--	S3
Butternut	<i>Juglans cinerea</i>	C	--	S2 S3
Two-flowered melic	<i>Melica mutica</i>	--	--	S1
Basil balm	<i>Monarda clinopodia</i>	--	--	S3
Carolina leaf-flower	<i>Phyllanthus caroliniensis</i>	--	--	S3
Shingle oak	<i>Quercus imbricaria</i>	--	--	S3
Overcup oak	<i>Quercus lyrata</i>	--	--	S3
Orange coneflower	<i>Rudbeckia fulgida</i>	--	--	S3

TABLE E.2: RARE PLANTS IN ROCK CREEK PARK (CONTINUED) ^{a/}

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Pearlwort	<i>Sagina decumbens</i>	--	--	S3
Long-beaked arrowhead	<i>Sagittaria longirostra</i>	--	--	SU
Showy skullcap	<i>Scutellaria serrata</i>	--	--	S3
Whorled rosinweed	<i>Silphium trifoliatum</i>	--	--	S3
Hispid goldenrod	<i>Solidago hispida</i>	--	E	SH SX
Little ladies' tresses	<i>Spiranthes tuberosa</i>	--	--	S3
Golden alexanders	<i>Zizia aurea</i>	--	--	S3

a/ Source: Unpublished table dated May 9, 2000 that was prepared by park staff and volunteers.

b/ Status and rank definitions:

Maryland status - This is the status of a species as determined by the Maryland Department of Natural Resources, in accordance with the Nongame and Endangered Species Conservation Act. Definitions for the following categories have been taken from Code of Maryland Regulations (COMAR) 08.03.08.

E = Endangered; a species whose continued existence as a viable component of the State's flora or fauna is determined to be in jeopardy.

C = Candidate species in decline.

-- indicates no special status

Maryland rank:

S1 = Highly State rare. Critically imperiled in Maryland because of extreme rarity (typically 5 or fewer estimated occurrences or very few remaining individuals or acres in the State) or because of some factor(s) making it especially vulnerable to extirpation.

S2 = State rare. Imperiled in Maryland because of rarity (typically 6 to 20 estimated occurrences or few remaining individuals or acres in the State) or because of some factor(s) making it vulnerable to becoming extirpated. Species with this rank are actively tracked by the Heritage & Biodiversity Conservation Programs.

S3 = Watch List. Rare to uncommon with the number of occurrences typically in the range of 21 to 100 in Maryland. It may have fewer occurrences but with a large number of individuals in some populations, and it may be susceptible to large-scale disturbances. Species with this rank are not actively tracked by the Heritage & Biodiversity Conservation Programs.

SH = Historically known from Maryland, but not verified for an extended period (usually 20 or more years), with the expectation that it may be rediscovered.

SX = Believed to be extirpated in Maryland with virtually no chance of rediscovery.

SU = Possibly rare in Maryland, but of uncertain status for reasons including lack of historical records, low search effort, cryptic nature of the species, or concerns that the species may not be native to the State. Uncertainty spans a range of 4 or 5 ranks as defined above.

TABLE E.3: STATE-LISTED SPECIES IN ARLINGTON COUNTY, VIRGINIA ^{a/}

Common Name	Scientific Name	Federal Status ^{b/}	Virginia Status ^{b/}	Virginia Rank ^{b/}
REPTILES				
Wood turtle	<i>Clemmys insculpta</i>	--	LT	S2
PLANTS				
Great Indian-plantain	<i>Arnoglossum muehlenbergii</i>	--	--	S2
Fringed brome	<i>Bromus ciliatus</i>	--	--	S1
White trout-lily	<i>Erythronium albidum</i>	--	--	S2
Sweet-scented Indian-plantain	<i>Hasteola suaveolens</i>	--	--	S2
Low frostweed	<i>Helianthemum propinquum</i>	--	--	S1
Ostrich fern	<i>Matteuccia struthiopteris</i> var <i>Pennsylvanica</i>	--	--	S1
Marsh muhly	<i>Muhlenbergia glomerata</i>	--	--	S2
Yellow nailwort	<i>Paronychia virginica</i> var. <i>virginica</i>	--	--	S1S2
Hairy beardtongue	<i>Penstemon hirsutus</i>	--	--	S2
Blue scorpion-weed	<i>Phacelia covillei</i>	--	--	S1
Fowl bluegrass	<i>Poa palustris</i>	--	--	S1S2
Large-leaf pondweed	<i>Potamogeton amplifolius</i>	--	--	S1S2
Torrey's mountain-mint	<i>Pycnanthemum torrei</i>	--	--	S2?
Dwarf chinquapin oak	<i>Quercus prinoides</i>	--	--	S2
Slender marsh pink	<i>Sabatia campanulata</i>	--	--	S2
Sandbar willow	<i>Salix exigua</i>	--	--	S1
Virginia mallow	<i>Sida hermaphrodita</i>	--	--	S1
Sticky goldenrod	<i>Solidago racemosa</i>	--	--	S1
Rock goldenrod	<i>Solidago rupestris</i>	--	--	S1

a/ Information from Virginia Natural Heritage Program web site, <http://www.state.va.us/~dcr/dnh/arli.htm>. Species listed are specific to Arlington County, Virginia, proximate to Rock Creek Park.

b/ Status and rank definitions:

S1 = Extremely rare; usually 5 or fewer populations or occurrences in the state; or may be a few remaining individuals; often especially vulnerable to extirpation.

S2 = Very rare; usually between 5 and 20 populations or occurrences; or with many individuals in fewer occurrences; often susceptible to becoming extirpated.

ST = State threatened; a species of flora or fauna which appears likely, within the foreseeable future, to become endangered in the State.

-- = no special status.

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
PLANARIANS				
A planarian	<i>Phagocata virilis</i>	--	--	S1
A planarian	<i>Planaria dactyligera</i>	--	--	S2
A planarian	<i>Procotyla typhlops</i>	--	E	S1
Hoffmaster's cave planarian	<i>Sphalloplana hoffmasteri</i>	--	E	S1
CRUSTACEANS				
A harpacticoid copepod	<i>Attheyella spinipes</i>	--	--	SU
Franz's cave isopod	<i>Caecidotea franzi</i>	--	E	S1
Holsinger's cave isopod	<i>Caecidotea holsingeri</i>	--	--	SR
Price's cave isopod	<i>Caecidotea pricei</i>	--	--	S3
Dearolf's cave isopod	<i>Crangonyx dearolfi</i>		E	S1
An entocytherid ostracod	<i>Dactylocythere scotos</i>	--	--	S1
A cyclopoid copepod	<i>Diacyclops palustris</i>	--	--	SU
A conchostracan phyllopod	<i>Eulimnadia francesae</i>	--	--	SU
A conchostracan phyllopod	<i>Eulimnadia ventricosa</i>	--	--	SU
Allegheny cave amphipod	<i>Stygobromus allegheniensis</i>	--	I	S2S3
Biggers' cave amphipod	<i>Stygobromus biggersi</i>	--	E	S1
Greenbrier cave amphipod	<i>Stygobromus emarginatus</i>	--	E	S1
Franz's cave amphipod	<i>Stygobromus franzi</i>	--	I	S2S3
Shenandoah cave amphipod	<i>Stygobromus gracilipes</i>	--	E	S1
Tidewater amphipod	<i>Stygobromus indentatus</i>	--	--	S1
Pizzini's cave amphipod	<i>Stygobromus pizzinii</i>	--	--	S1
Barrelville amphipod	<i>Stygobromus sp 5</i>	--	--	S1
An amphipod	<i>Stygobromus sp 6</i>	--	--	S1
Roundtop amphipod	<i>Stygobromus sp 14</i>	--	--	S1
Tenuis amphipod	<i>Stygobromus tenuis tenuis</i>	--	--	SU
Potomac amphipod	<i>Stygobromus tenuis potomacus</i>	--	--	S3
SPIDERS				
American purse-web spider	<i>Atypus bicolor</i>	--	--	S1S2

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Snivelys cave spider	<i>Oreonetides sp 1</i>	--	--	SU
Appalachian cave spider	<i>Porrhomma cavernicolum</i>	--	--	S2
INSECTS				
<i>Collembola</i>				
Crabtree cave springtail	<i>Arrhopalites sp 1</i>	--	--	SU
	<i>Ephemeroptera</i>	--	--	
Walker's tusked sprawler	<i>Potamanthus walkeri</i>	--	--	SU
	<i>Odonata</i>	--	--	
Spring blue darner	<i>Aeshna mutata</i>	--	E	S1
Sable clubtail	<i>Gomphus rogersi</i>	--	E	S1
Treetop emerald	<i>Somatochlora provocans</i>	--	--	S1
Elusive clubtail	<i>Stylurus notatus</i>	--	--	S1
	(= <i>Gomphus notatus</i>)	--	--	
Gray petaltail	<i>Tachopteryx thoreyi</i>	--	--	SU
<i>Homoptera</i>				
A cicadellid leafhopper	<i>Chlorotettix sp 1</i>	--	--	SU
Eastern sedge barrens planthopper	<i>Limotettix sp 1</i>	--	--	S1
<i>Coleoptera</i>				
A tiger beetle	<i>Cicindela ancocisconensis</i>	--	E	S1
Northeastern beach tiger beetle	<i>Cicindela dorsalis dorsalis</i>	LT	E	S1
White tiger beetle	<i>Cicindela dorsalis media</i>	--	E	S1
Little white tiger beetle	<i>Cicindela lepida</i>	--	E	S1
A tiger beetle	<i>Cicindela patruela</i>	--	--	S1S2
Puritan tiger beetle	<i>Cicindela puritana</i>	LT	E	S1
A tiger beetle	<i>Cicindela purpurea</i>	--	--	S3
A tiger beetle	<i>Cicindela scutellaris</i>	--	--	S3
A tiger beetle	<i>Cicindela splendida</i>	--	--	S3
A tiger beetle	<i>Cicindela unipunctata</i>	--	--	S3
Six-banded longhorn beetle	<i>Dryobius sexnotatus</i>	--	E	S1
A dytiscid beetle	<i>Hopierius planatus</i>	--	--	S1
A hydrophilid beetle	<i>Hydrochara occulta</i>	--	--	SU

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Seth forest water scavenger beetle	<i>Hydrochus sp 1</i>	--	--	SH
Giant stag beetle	<i>Lucanus elephas</i>	--	--	S1
A cave beetle	<i>Pseudanophthalmus sp 15</i>	--	--	S1
A coccinellid beetle	<i>Scymnus gordonii</i>	--	--	SU
A hydrophilid beetle	<i>Sperchopsis tessellatus</i>	--	--	S2
	<i>Trichoptera</i>	--	--	
A scalaris trichopteran	<i>Hydropsyche brunneipennis</i>	--	--	S3
	<i>Lepidoptera - Butterflies</i>			
Pepper-and-salt skipper	<i>Amblyscirtes hegon</i>	--	I	S2
Great purple hairstreak	<i>Atlides halesus</i>	--	--	S1S2
Golden-banded skipper	<i>Autochton cellus</i>	--	E	S1
Silver-bordered fritillary	<i>Boloria selene myrina</i>	--	--	S3
Northern metalmark	<i>Calephelis borealis</i>	--	T	S2
Sooty azure	<i>Celastrina ebenina</i>	--	E	S1
Appalachian blue	<i>Celastrina neglectamajor</i>	--		S3S4
Harris' checkerspot	<i>Chlosyne harrisii</i>	--	T	S2
Pink-edged sulphur	<i>Colias interior</i>	--	--	S1
Gemmed satyr	<i>Cyllopsis gemma</i>	--	--	SHSR
Early hairstreak	<i>Erora laeta</i>	--	E	S1
Mottled duskywing	<i>Erynnis martialis</i>	--	E	S1
Persius duskywing	<i>Erynnis persius</i>	--	--	SHSR
Olympia marble	<i>Euchloe olympia</i>	--	I	S2
Two-spotted skipper	<i>Euphyes bimacula</i>	--	E	S1
Sedge skipper	<i>Euphyes dion</i>	--	--	S3
Saw-grass skipper	<i>Euphyes pilatka</i>	--	--	SU
Northern hairstreak	<i>Fixsenia ontario</i>	--	E	S1S2
Silvery blue	<i>Glaucopsyche lygdamus</i>	--	I	S2
Carolina satyr	<i>Hermeuptychia sosybius</i>	--	--	S1S3
Dotted skipper	<i>Hesperia attalus slossonae</i>	--	--	SH
Indian skipper	<i>Hesperia sassacus</i>	--	--	S3
Frosted elfin	<i>Incisalia irus</i>	--	E	S1

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Bog copper	<i>Lycaena epixanthe</i>	--	E	S1
Compton's tortoiseshell	<i>Nymphalis vaualbum</i>	--	E	S1
Giant swallowtail	<i>Papilio cresphontes</i>	--	I	S2
Palamedes swallowtail	<i>Papilio palamedes</i>	--	--	SU
Chermock's mulberrywing	<i>Poanes massasoit chermocki</i>	--	E	S1
Long dash	<i>Polites mystic</i>	--	--	S3S4
Rare skipper	<i>Problema bulenta</i>	--	T	S1
Southern grizzled skipper	<i>Pyrgus wyandot</i>	--	E	S1
Acadian hairstreak	<i>Satyrium acadicum</i>	--	--	SA
Hickory hairstreak	<i>Satyrium caryaevorum</i>	--	E	S1
Edwards' hairstreak	<i>Satyrium edwardsii</i>	--	E	S1
King's hairstreak	<i>Satyrium kingi</i>	--	T	S1
Atlantis fritillary	<i>Speyeria atlantis</i>	--	T	S1
Diana	<i>Speyeria diana</i>	--	--	SA
Regal fritillary	<i>Speyeria idalia</i>	--	E	S1
<i>Lepidoptera – Moths</i>				
A noctuid moth	<i>Apamea apamiformis</i>	--	--	S2S3
A noctuid moth	<i>Apamea mixta</i>	--	--	S1
A noctuid moth	<i>Apamea plutonia</i>	--	--	SU
A noctuid moth	<i>Capis curvata</i>	--	--	S1S2
Marbled underwing	<i>Catocala marmorata</i>	--	--	SH
Precious underwing	<i>Catocala pretiosa pretiosa</i>	--	--	SH
A geometrid moth	<i>Cyclophora nanaria</i>	--	--	S1?
A lymantriid moth	<i>Dasychira atrivenosa</i>	--	--	SU
A noctuid moth	<i>Elaphria georgei</i>	--	--	SU
A noctuid moth	<i>Hadena ectypa</i>	--	--	SU
Woodland buckmoth	<i>Hemileuca maia ssp 4</i>	--	--	SU
Cypress sphinx moth	<i>Isoparce cupressi</i>	--	--	SU
Sinuuous lytrois	<i>Lytrosis sinuosa</i>	--	--	S1S3
A noctuid moth	<i>Meropleon titan</i>	--	--	SU
Seaside goldenrod stem borer	<i>Papaipema duovata</i>	--	--	SU
Polymnia stalk borer	<i>Papaipema polymniae</i>	--	--	SH

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
A noctuid moth	<i>Schinia parmeliana</i>	--	--	SH
Franck's sphinx	<i>Sphinx franckii</i>	--	--	SH
A noctuid moth	<i>Xestia bollii</i>	--	--	SU
FISHES				
Mud sunfish	<i>Acantharchus pomotis</i>	--	--	S2
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	LE	E	S1
Atlantic sturgeon	<i>Acipenser oxyrhynchus</i>	--	--	S1
Longnose sucker	<i>Catostomus catostomus</i>	--	E	S1
Flier	<i>Centrarchus macropterus</i>	--	--	SU
Redside dace	<i>Clinostomus elongatus</i>	--	--	S1
Slimy sculpin	<i>Cottus cognatus</i>	--	T	S1
Blackbanded sunfish	<i>Enneacanthus chaetodon</i>	--	I	S1
Maryland darter	<i>Etheostoma sellare</i>	LE	E	S1
Glassy darter	<i>Etheostoma vitreum</i>	--	E	S1
Spotfin killifish	<i>Fundulus luciae</i>	--	--	S2
Stonecat	<i>Noturus flavus</i>	--	I	S1
Logperch	<i>Percina caprodes</i>	--	--	S1
AMPHIBIANS				
Jefferson salamander	<i>Ambystoma jeffersonianum</i>	--	--	S3
Eastern tiger salamander	<i>Ambystoma tigrinum</i>	--	E	S2
Green salamander	<i>Aneides aeneus</i>	--	E	S2
Hellbender	<i>Cryptobranchus alleganiensis</i>	--	E	S1
Eastern narrow-mouthed toad	<i>Gastrophryne carolinensis</i>	--	E	S1S2
Barking treefrog	<i>Hyla gratiosa</i>	--	E	S1
Wehrle's salamander	<i>Plethodon wehrlei</i>	--	I	S2
Mountain chorus frog	<i>Pseudacris brachyphona</i>	--	T	S2
Carpenter frog	<i>Rana virgatipes</i>	--	I	S2
REPTILES				
Eastern spiny softshell	<i>Apalone spinifera</i>	--	I	S1
Eastern scarlet snake	<i>Cemophora coccinea</i>	--	--	S3
Bog turtle	<i>Clemmys muhlenbergii</i>	--	T	S2
Timber rattlesnake	<i>Crotalus horridus</i>	--	--	S3

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
Northern coal skink	<i>Eumeces anthracinus</i>	--	E	SU
Rainbow snake	<i>Farancia erythrogramma</i>	--	E	S1
Map turtle	<i>Graptemys geographica</i>	--	E*	S1
Redbelly water snake	<i>Nerodia erythrogaster</i>	--	--	S2S3
Northern pine snake	<i>Pituophis melanoleucus</i>	--	--	SR
Mountain earth snake	<i>Virginia valeriae pulchra</i>	--	E	S2
BIRDS				
Northern goshawk	<i>Accipiter gentilis</i>	--	E	S1B
Sharp-shinned hawk	<i>Accipiter striatus</i>	--		S1S2B
Northern saw-whet owl	<i>Aegolius acadicus</i>	--	--	S1B
Sharp-tailed sparrow	<i>Ammodramus caudacutus</i>	--	--	S3B
Henslow's sparrow	<i>Ammodramus henslowii</i>	--	T	S1B
Short-eared owl	<i>Asio flammeus</i>	--	I	SHB
Long-eared owl	<i>Asio otus</i>	--	--	SHB
Upland sandpiper	<i>Bartramia longicauda</i>	--	E	S1B
American bittern	<i>Botaurus lentiginosus</i>	--	I	S1S2B
Whip-poor-will	<i>Caprimulgus vociferus</i>	--	--	S3S4B
Purple finch	<i>Carpodacus purpureus</i>	--	--	S3B
Hermit thrush	<i>Catharus guttatus</i>	--	--	S3S4B
Piping plover	<i>Charadrius melodus</i>	LT	E	S1B
Wilson's plover	<i>Charadrius wilsonia</i>	--	E	S1B
Common nighthawk	<i>Chordeiles minor</i>	--	--	S3S4B
Northern harrier	<i>Circus cyaneus</i>	--	--	S2B
Sedge wren	<i>Cistothorus platensis</i>	--	T	S1B
Olive-sided flycatcher	<i>Contopus borealis</i>	--	E	SHB
Common raven	<i>Corvus corax</i>	--	--	S3B
Cerulean warbler	<i>Dendroica cerulea</i>	--	--	S3S4B
Blackburnian warbler	<i>Dendroica fusca</i>	--	T	S1S2B
Little blue heron	<i>Egretta caerulea</i>	--	--	S3B
Tricolored heron	<i>Egretta tricolor</i>	--	--	S3B
Alder flycatcher	<i>Empidonax alnorum</i>	--	I	S2B
Least flycatcher	<i>Empidonax minimus</i>	--	--	S3S4B
Common moorhen	<i>Gallinula chloropus</i>	--	I	S2B

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
American oystercatcher	<i>Haematopus palliatus</i>	--	--	S2S3B
Bald eagle	<i>Haliaeetus leucocephalus</i>	LT	E	S2S3B
Least bittern	<i>Ixobrychus exilis</i>	--	I	S2S3B
Dark-eyed junco	<i>Junco hyemalis</i>	--	--	S2B
Loggerhead shrike	<i>Lanius ludovicianus</i>	--	E	S1B
Laughing gull	<i>Larus atricilla</i>	--	--	S1B
Black rail	<i>Laterallus jamaicensis</i>	--	I	S2S3B
Swainson's warbler	<i>Limnothlypis swainsonii</i>	--	E	S1B
Hooded merganser	<i>Lophodytes cucullatus</i>	--	--	S1B
Yellow-crowned night-heron	<i>Nyctanassa violacea</i>	--	--	S2S3B
Mourning warbler	<i>Oporornis philadelphia</i>	--	E	S1B
Savannah sparrow	<i>Passerculus sandwichensis</i>	--	--	S3S4B
Pied-billed grebe	<i>Podilymbus podiceps</i>	--	--	S2B
Vesper sparrow	<i>Pooecetes gramineus</i>	--	--	S3S4B
Sora	<i>Porzana carolina</i>	--	--	S1B
Golden-crowned kinglet	<i>Regulus satrapa</i>	--	--	S2B
Black skimmer	<i>Rynchops niger</i>	--	T	S1S2B
Northern waterthrush	<i>Seiurus noveboracensis</i>	--	--	S2S3B
Red-breasted nuthatch	<i>Sitta canadensis</i>	--	--	S1B
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	--	--	SHB
Dickcissel	<i>Spiza americana</i>	--	--	S2B
Least tern	<i>Sterna antillarum</i>	--	T	S2B
Royal tern	<i>Sterna maxima</i>	--	E	S1B
Gull-billed tern	<i>Sterna nilotica</i>	--	T	S1B
Sandwich tern	<i>Sterna sandvicensis</i>	--	--	S1B
Bewick's wren	<i>Thryomanes bewickii altus</i>	--	E	S1B
Winter wren	<i>Troglodytes troglodytes</i>	--	--	S2B
Common barn-owl	<i>Tyto alba</i>	--	--	S3
Golden-winged warbler	<i>Vermivora chrysoptera</i>	--	--	S3B
Nashville warbler	<i>Vermivora ruficapilla</i>	--	I	S1S2B
Canada warbler	<i>Wilsonia canadensis</i>	--	--	S3B

TABLE E.4: STATE-LISTED ANIMAL SPECIES IN MARYLAND (CONTINUED) ^a

Common Name	Scientific Name	Federal Status ^b	Maryland Status ^b	Maryland Rank ^b
MAMMALS				
Southeastern star-nosed mole	<i>Condylura cristata parva</i>	--	--	SU
Porcupine	<i>Erethizon dorsatum</i>	--	I	S1S2
Bobcat	<i>Lynx rufus</i>	--	I	S3
Fisher	<i>Martes pennanti</i>	--	--	S3S4
Southern rock vole	<i>Microtus chrotorrhinus</i>	--	E	S1
	<i>carolinensis</i>	--	--	
Ermine	<i>Mustela erminea</i>	--	--	SR
Least weasel	<i>Mustela nivalis</i>	--	I	S2S3
Eastern small-footed bat	<i>Myotis leibii</i>	--	I	S2
Indiana bat	<i>Myotis sodalis</i>	LE	E	S1B?
Allegheny woodrat	<i>Neotoma magister</i>	--	E	S1
Delmarva fox squirrel	<i>Sciurus niger cinereus</i>	LE	E	S1
Long-tailed shrew	<i>Sorex dispar</i>	--	I	S2
Smoky shrew	<i>Sorex fumeus</i>	--	T	S1S2
Southern pygmy shrew	<i>Sorex hoyi winnemana</i>	--	--	S2
Southeastern shrew	<i>Sorex longirostris</i>	--	--	S3S4
Southern water shrew	<i>Sorex palustris punctulatus</i>	--	E	S1
Eastern spotted skunk	<i>Spilogale putorius</i>	--	--	S1
Appalachian cottontail	<i>Sylvilagus obscurus</i>	--	I	S1
Southern bog lemming	<i>Synaptomys cooperi</i>	--	--	S3
Black bear	<i>Ursus americanus</i>	--	--	S3

a/ Information from Maryland Department of Natural Resources, Maryland Heritage & Biodiversity Conservation Programs web site, <ftp://ftp.heritage.tnc.org/pub/nhp/us/md/rarean.html>. Table shows species throughout Maryland; species listed are not necessarily specific to the Rock Creek Park region.

b/ Status and rank definitions:

S1 = Highly State rare. Critically imperiled in Maryland because of extreme rarity (typically 5 or fewer estimated occurrences or very few remaining individuals or acres in the State) or because of some factor(s) making it especially vulnerable to extirpation.

S2 = State rare. Imperiled in Maryland because of rarity (typically 6 to 20 estimated occurrences or few remaining individuals or acres in the State) or because of some factor(s) making it vulnerable to becoming extirpated. Species with this rank are actively tracked by the Heritage & Biodiversity Conservation Programs.

S3 = Watch List. Rare to uncommon with the number of occurrences typically in the range of 21 to 100 in Maryland. It may have fewer occurrences but with a large number of individuals in some populations, and it may be susceptible to large-scale disturbances. Species with this rank are not actively tracked by the Heritage & Biodiversity Conservation Programs.

S3.1A = "Watch List" species that is actively tracked by the Heritage & Biodiversity Conservation Programs because of its global rarity and, therefore, the global significance of Maryland occurrences.

S4 = Apparently secure in Maryland with typically more than 100 occurrences in the State or may have fewer occurrences if they contain large numbers of individuals. It is apparently secure under present conditions, although it may be restricted to only a portion of the State.

S5 = Demonstrably secure in Maryland under present conditions.

SA = Accidental or a vagrant in Maryland.

SH = Historically known from Maryland, but not verified for an extended period (usually 20 or more years), with the expectation that it may be rediscovered.

SR = Reported from Maryland, but without persuasive documentation that would provide a basis for either accepting or rejecting the report (e.g., no voucher specimen exists).

SU = Possibly rare in Maryland, but of uncertain status for reasons including lack of historical records, low search effort, cryptic nature of the species, or concerns that the species may not be native to the State. Uncertainty spans a range of 4 or 5 ranks as defined above.

S? = The species has not yet been ranked.

_B = This species is a migrant and the rank refers only to the breeding status of the species. Such a migrant may have a different rarity rank for non-breeding populations.

Federal status - This is the status of a species as determined by the U.S. Fish and Wildlife Service's Office of Endangered Species, in accordance with the Endangered Species Act. Definitions for the following categories have been modified from 50 CFR 17.

LE = Taxa listed as endangered; in danger of extinction throughout all or a significant portion of their range.

LT = Taxa listed as threatened; likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

PE = Taxa proposed to be listed as endangered.

PT = Taxa proposed to be listed as threatened.

* = A qualifier denoting taxa which may be possibly extinct (although persuasive documentation of extinction has not been made).

Maryland status - This is the status of a species as determined by the Maryland Department of Natural Resources, in accordance with the Nongame and Endangered Species Conservation Act. Definitions for the following categories have been taken from Code of Maryland Regulations (COMAR) 08.03.08.

E = Endangered; a species whose continued existence as a viable component of the State's flora or fauna is determined to be in jeopardy.

I = In Need of Conservation; an animal species whose population is limited or declining in the State such that it may become threatened in the foreseeable future if current trends or conditions persist.

T = Threatened; a species of flora or fauna which appears likely, within the foreseeable future, to become endangered in the State.

* = A qualifier denoting the species is listed in a limited geographic area only.

-- indicates no special status

APPENDIX F – NATIONAL REGISTER OF HISTORIC PLACES PROPERTIES

Historic properties within Rock Creek Park and the Rock Creek and Potomac Parkway that are listed on the National Register of Historic Places include the

Peirce-Klinge Mansion (Linnaean Hill)

Peirce Mill

Peirce Springhouse and Peirce Mill Barn

Godey Lime Kilns

Boulder Bridge and Ross Drive Bridge

Fort DeRussy, which is listed as a contributing feature to “Civil War Fort Sites” National Register nomination

In addition to the listing of individual properties, the area of Rock Creek Park covered by this general management plan was listed in the National Register of Historic Places as Rock Creek Park Historic District (No. 91001524) on October 23, 1991. The historic district boundaries encompass Public Reservation 339 established as Rock Creek Park on September 27, 1890. The historic district included 31 resources classified as contributing to its significance. These resources are listed in table F.1.

TABLE F.1: RESOURCES THAT CONTRIBUTE TO THE SIGNIFICANCE OF THE ROCK CREEK HISTORIC DISTRICT

1) Peirce-Klinge Mansion	12) Visitor Center/Park Police Substation (Lodge House)	22) Morrow Drive Bridge
2) Peirce-Klinge House	13) Jules J. Jusserand Memorial	23) Rapids Footbridge
3 and 4) Peirce-Klinge Utility House and Potting Shed	14) Fort DeRussy Earthworks	24) Rolling Meadow Bridge
5) Peirce-Klinge Stable/Garage	15) Ross Drive Bridge	25) Riley Spring Bridge
6) Peirce Mill	16) Grant Road Bridge	26) Boundary Bridge
7) Peirce Mill Bridge	17) Boulder Bridge	27) Bluffs Bridge
8) Peirce Mill Dam	18) Pinehurst Bridge	28) Circulation Network-Historic Roads and Trails ^{a/}
9) Peirce Mill Barn	19) Sixteenth Street Bridge	29) Rock Creek Golf Course
10) Peirce Springhouse	20) Old Military Road Bridge-Joyce Road Bridge	30) Outdoor Fireplaces (6)
11) Joaquin Miller cabin	21) Milkhouse Ford and Cross Valley Road Structures	31) Culverts and Retaining Walls

^{a/} Includes Beach Drive, Peirce Mill Road, Piney Branch Parkway, Grant Road, Sherrill Drive, Wise Road, Bingham Drive, Joyce Road, Ridge (Glover) Road, Ross Drive, Morrow Drive, and portions of several other roads.

APPENDIX G – COMPARISON OF IMPACTS OF ALTERNATIVES ON TRAFFIC, BASED ON MODELING

This appendix consists of three tables that were developed using the traffic modeling method described in Appendix H.

Table G.1 – Year 2020 Average Weekday Traffic Volumes.

Table G.2 – Year 2020 A.M./P.M. Peak-Hour Traffic Volumes

Table G.3 – Level of Service Analysis

TABLE G.1
MATRIX 1: YEAR 2020 AVERAGE WEEKDAY TRAFFIC VOLUMES

ROADWAY LINK RESULTS							
Roadway	From	To	1990 ADT	2020 ADT			
				Alt A		Alt B	
				Volume	% Chg*	Volume	% Chg*
Beach Drive	Wyndale	W Beach	5,400	12,400	-10.1%	13,800	0
Beach Drive	Wise	Sherrill	8,000	12,100	-28.4%	16,900	0
Beach Drive	Bingham	Joyce	8,700	8,800	-30.2%	12,600	300
Beach Drive	Joyce	Broad Branch	9,000	7,000	-40.2%	11,700	0
Beach Drive	Blagden	Tilden / Park	18,000	21,800	-18.4%	26,700	20,000
Beach Drive	Porter	Zoo	24,000	25,500	-24.6%	33,800	27,900
Beach Drive	Zoo	24th / Cathedral	24,700	26,400	-26.7%	36,000	30,800
RCPW SB	24th / Cathedral	Waterside NB on	21,700	28,300	-9.3%	31,200	27,500
RCPW NB	24th / Cathedral	Waterside NB on	21,700	31,100	-6.9%	33,400	28,900
RCPW SB	Waterside ramps	P ramps	27,500	34,900	-6.7%	37,400	34,900
RCPW NB	Waterside ramps	P ramps	27,500	38,800	-4.2%	40,500	36,700
RCPW SB	K / Whitehurst	Virginia	26,200	34,500	-3.4%	35,700	35,100
RCPW NB	K / Whitehurst	Virginia	26,200	38,300	-3.0%	39,500	36,000
RCPW SB	Virginia	Teddy Roosevelt Br	20,000	26,000	-0.8%	26,200	27,800
RCPW NB	Virginia	Teddy Roosevelt Br	20,000	28,100	-2.8%	28,900	28,300
16th Street	DC line	S Portal	30,000	46,100	-1.1%	46,600	47,400
16th Street	Alaska	Sherrill	36,000	58,000	2.5%	56,600	62,100
16th Street	Missouri	Kennedy	30,000	49,300	2.3%	48,200	49,700
16th Street	Kennedy	Colorado	28,000	45,800	1.8%	45,000	46,700
16th Street	Park	Irving	30,400	46,500	3.6%	44,900	45,700
16th Street	Euclid	Florida	32,200	41,800	1.7%	41,100	42,400
Alaska Avenue	Georgia	Morningside	6,800	11,300	3.7%	10,900	11,600
Georgia Avenue	Alaska	Fern	29,000	38,500	0.3%	38,400	39,800
Georgia Avenue	Dahlia	Aspen	28,000	37,300	0.3%	37,200	38,400
Georgia Avenue	Missouri	Kennedy	22,000	34,900	8.0%	32,300	34,800
Georgia Avenue	Arkansas	Upshur	20,000	33,000	-0.9%	33,300	31,800
Oregon Avenue	Western	Wise / Chesnut	1,700	1,900	0.0%	1,900	1,900
Oregon Avenue	Chesnut	Nebraska	8,500	11,100	3.7%	10,700	11,600
Oregon Avenue	Moreland	Military	3,500	4,300	-8.5%	4,700	4,800
Glover Road	Military	Grant	2,500	3,200	-15.8%	3,800	3,600
Grant Road	Glover	Broad Branch	2,100	2,700	-10.0%	3,000	2,800
Glover Road	Ross	Broad Branch	500	800	-38.5%	1,300	1,100
Ross Drive	Glover	Joyce	200	400	-33.3%	600	300
Broad Branch Road	Western	McKinley	1,200	2,700	0.0%	2,700	3,800
Broad Branch Road	32nd St	27th St	2,000	3,200	3.2%	3,100	3,500
Broad Branch Road	Grant	Brandywine	6,800	8,800	-2.2%	9,000	9,200
Connecticut Avenue	DC line	McKinley	36,200	45,500	0.4%	45,300	46,100
Connecticut Avenue	Nebraska	36th	38,000	47,900	0.8%	47,500	47,400
Connecticut Avenue	Macomb	Cathedral	37,000	50,200	2.9%	48,800	47,300
Connecticut Avenue	Columbia	Florida	41,200	53,700	1.9%	52,700	55,800
Connecticut Avenue	18th St	Dupont Circle	27,600	33,300	2.1%	32,600	34,000
Wisconsin Avenue	Albemarle	Nebraska	30,800	40,000	1.3%	39,500	41,300
Wisconsin Avenue	Porter	Newark	30,200	38,500	2.4%	37,600	39,400
Wisconsin Avenue	Calvert	Reservoir	29,000	34,000	-0.6%	34,200	34,800
Wisconsin Avenue	O St	P St	24,000	31,400	1.3%	31,000	31,400
Massachusetts Avenue	DC line	49th St	25,000	30,900	1.6%	30,400	31,400
Massachusetts Avenue	Macomb	Idaho	33,400	37,600	0.0%	37,600	38,200
Massachusetts Avenue	Garfield	34th St	46,000	52,200	0.8%	51,800	53,000
Massachusetts Avenue	24th St	Sheridan Circle	25,000	30,700	0.3%	30,600	31,300
Massachusetts Avenue	Sheridan Circle	Florida	29,500	35,500	0.3%	35,400	36,100
Massachusetts Avenue	17th St	18th St	22,000	26,000	-1.9%	26,500	27,000
Nebraska Avenue	Oregon	Utah	5,800	8,600	11.7%	7,700	9,200
Nebraska Avenue	Nevada	Military	22,300	27,100	1.9%	26,600	27,400
Nebraska Avenue	Reno	Albemarle	19,000	23,300	1.7%	22,900	23,800
Nebraska Avenue	Van Ness	Massachusetts	21,000	25,000	-0.4%	25,100	25,500
Military Road	Nebraska	32nd St	20,600	24,800	-2.0%	25,300	25,800
Military Road	Oregon	Beach	34,000	39,900	-2.0%	40,700	40,800
Military Road	16th St	14th St	28,400	36,300	0.0%	36,300	37,900
West Beach	Beach	Portal	11,500	14,900	-12.9%	17,100	11,300
Wise Road	Oregon	Beach	10,200	14,600	3.5%	14,100	15,200
Sherrill Drive	Beach	16th St	2,400	6,200	-19.5%	7,700	1,600
Bingham Drive	Oregon	Beach	1,000	1,900	5.6%	1,800	1,900
Joyce Road	Morrow	16th St	900	1,100	-26.7%	1,500	0
Morrow	Joyce	Carter-Barron	1,600	4,000	17.6%	3,400	1,000
Kennedy	14th St	13th St	6,400	9,700	-1.0%	9,800	7,700
Blagden Avenue	Beach	Upshur	7,100	12,600	-2.3%	12,900	13,800
Blagden Avenue	Upshur	Decatur	5,000	9,600	2.1%	9,400	11,200
Piney Branch Pkwy	Beach	16th St	10,100	11,900	-10.5%	13,300	14,000
Tilden Street	Linnean	Beach	9,000	12,200	3.4%	11,800	12,900
Park Road	Beach	Piney Branch	8,900	12,200	0.8%	12,100	12,900
Porter Street	Connecticut	Klingie	16,000	19,500	4.3%	18,700	19,100
Adams Mill Road	Park	Irving	9,900	11,500	0.0%	11,500	11,800
Harvard Street	Adams Mill	16th St	5,000	6,900	3.0%	6,700	7,200
Zoo Main Rd	Connecticut	Zoo	2,000	3,100	29.2%	2,400	2,400
Cathedral Avenue	Calvert	Beach / 24th	9,000	6,300	-43.2%	11,100	6,300
24th / Calvert access	24th / Calvert	Beach	19,800	34,100	14.4%	29,800	26,400
M Street	30th St	Pennsylvania	44,000	54,600	-0.5%	54,900	54,800
M Street	New Hampshire	22nd St	21,600	24,300	0.0%	24,300	24,800
New Hampshire Avenue	19th St	20th St	10,000	14,200	-4.7%	14,900	16,000
New Hampshire Avenue	21st St	M St	10,200	13,100	5.6%	12,400	14,000
New Hampshire Avenue	Washington Circle	Virginia	6,000	8,000	1.3%	7,900	8,800
Pennsylvania Avenue	M St	L St	30,000	38,000	-0.5%	38,200	37,800
Pennsylvania Avenue	K St	I St	23,000	29,900	0.0%	29,900	29,800
Virginia Avenue	New Hampshire	23rd St	14,000	15,500	-3.1%	16,000	14,000
Constitution Avenue	23rd St	Henry Bacon	34,000	44,600	4.0%	42,900	45,000

* Note: % Change shown represents the difference between the selected alternative and Alternative B (Continued Current Management) in the year 2020.

TABLE G.2
YEAR 2020 AM/PM PEAK HOUR TRAFFIC VOLUMES

ROADWAY LINK RESULTS														
			1990		Alternative A				2020		Alternative C			
			Peak Hour Volume		Alternative A				Alternative B		Alternative C			
			AM	PM	AM Peak Hour Volume	% Chg*	PM Peak Hour Volume	% Chg*	AM Pk Hr Volume	PM Pk Hr Volume	AM Peak Hour Volume	% Chg*	PM Peak Hour Volume	% Chg*
Roadway	From	To	AM	PM	AM Peak Hour Volume	% Chg*	PM Peak Hour Volume	% Chg*	AM Pk Hr Volume	PM Pk Hr Volume	AM Peak Hour Volume	% Chg*	PM Peak Hour Volume	% Chg*
Beach Drive	Wyndale	W Beach	600	700	1,400	7.7%	1,400	0.0%	1,300	1,400	0	-100.0%	0	-100.0%
Beach Drive	Wise	Sherrill	700	900	1,200	-7.7%	1,500	-11.8%	1,300	1,700	0	-100.0%	0	-100.0%
Beach Drive	Bingham	Joyce	700	1,000	700	-22.2%	1,100	-15.4%	900	1,300	100	-88.9%	100	-92.3%
Beach Drive	Joyce	Broad Branch	700	1,000	500	-37.5%	700	-41.7%	800	1,200	0	-100.0%	0	-100.0%
Beach Drive	Blagden	Tilden / Park	1,400	1,900	1,300	-23.5%	1,900	-20.8%	1,700	2,400	1,300	-23.5%	1,900	-20.8%
Beach Drive	Porter	Zoo	1,700	2,100	900	-55.0%	1,400	-44.0%	2,000	2,500	1,400	-30.0%	2,000	-20.0%
Beach Drive	Zoo	24th / Cathedral	1,700	2,100	900	-57.1%	1,200	-53.8%	2,100	2,600	1,900	-9.5%	2,000	-23.1%
RCPW SB	24th / Cathedral	Waterside NB on	3,700	0	4,000	-11.1%	0	0.0%	4,500	0	1,800	-60.0%	1,900	N/A
RCPW NB	24th / Cathedral	Waterside NB on	0	3,600	0	0.0%	4,100	-12.8%	0	4,700	1,900	N/A	1,900	-59.6%
RCPW SB	Waterside ramps	P ramps	4,400	0	4,700	-7.8%	0	0.0%	5,100	0	2,200	-56.9%	2,300	N/A
RCPW NB	Waterside ramps	P ramps	0	4,500	0	0.0%	5,300	-7.0%	0	5,700	2,300	N/A	2,600	-54.4%
RCPW SB	K / Whitehurst	Virginia	3,800	0	4,100	-6.8%	0	0.0%	4,400	0	1,400	-68.2%	2,700	N/A
RCPW NB	K / Whitehurst	Virginia	0	4,200	0	0.0%	5,200	-5.5%	0	5,500	2,200	N/A	2,500	-54.5%
RCPW SB	Virginia	Teddy Roosevelt Br	3,100	0	3,400	-2.9%	0	0.0%	3,500	0	1,600	-54.3%	2,300	N/A
RCPW NB	Virginia	Teddy Roosevelt Br	0	3,400	0	0.0%	4,000	-4.8%	0	4,200	1,800	N/A	2,400	-42.9%
16th Street	DC line	S Portal	2,700	2,700	3,600	0.0%	3,500	-2.8%	3,600	3,600	3,700	2.8%	3,600	0.0%
16th Street	Alaska	Sherrill	3,200	3,200	4,400	0.0%	4,400	0.0%	4,400	4,400	4,500	2.3%	4,800	9.1%
16th Street	Missouri	Kennedy	2,700	2,700	3,800	2.7%	3,800	2.7%	3,700	3,700	3,800	2.7%	3,800	2.7%
16th Street	Kennedy	Colorado	2,500	2,500	3,600	2.9%	3,500	0.0%	3,500	3,500	3,600	2.9%	3,600	2.9%
16th Street	Park	Irving	2,700	2,700	3,600	2.9%	3,700	5.7%	3,500	3,500	3,500	0.0%	3,500	0.0%
16th Street	Euclid	Florida	2,900	2,900	3,300	3.1%	3,200	0.0%	3,200	3,200	3,500	9.4%	3,500	9.4%
Alaska Avenue	Georgia	Morningside	600	600	800	0.0%	800	0.0%	800	800	800	0.0%	900	12.5%
Georgia Avenue	Alaska	Fern	2,600	2,600	3,000	0.0%	3,000	0.0%	3,000	3,000	3,100	3.3%	3,100	3.3%
Georgia Avenue	Dahlia	Aspen	2,500	2,500	2,900	0.0%	2,900	0.0%	2,900	2,900	2,900	0.0%	3,000	3.4%
Georgia Avenue	Missouri	Kennedy	2,000	2,000	2,600	4.0%	2,600	4.0%	2,500	2,500	2,600	4.0%	2,700	8.0%
Georgia Avenue	Arkansas	Upshur	1,800	1,800	2,500	-3.8%	2,500	-3.8%	2,600	2,600	2,500	-3.8%	2,400	-7.7%
Oregon Avenue	Western	Wise / Chesnut	200	200	200	0.0%	200	0.0%	200	200	200	0.0%	200	0.0%
Oregon Avenue	Chesnut	Nebraska	1,000	900	1,000	-9.1%	1,000	0.0%	1,100	1,000	1,100	0.0%	1,000	0.0%
Oregon Avenue	Moreland	Military	400	400	400	0.0%	400	0.0%	400	400	400	0.0%	400	0.0%
Glover Road	Military	Grant	300	200	300	0.0%	200	-33.3%	300	300	300	0.0%	300	0.0%
Grant Road	Glover	Broad Branch	200	200	200	-33.3%	200	0.0%	300	200	200	-33.3%	200	0.0%
Glover Road	Ross	Broad Branch	100	0	100	0.0%	100	0.0%	100	100	100	0.0%	100	0.0%
Ross Drive	Glover	Joyce	0	0	0	-100.0%	0	0.0%	100	0	0	-100.0%	0	N/A
Broad Branch Road	Western	McKinley	100	100	200	0.0%	200	0.0%	200	200	400	100.0%	300	50.0%
Broad Branch Road	32nd St	27th St	200	200	300	0.0%	300	0.0%	300	300	300	0.0%	300	0.0%
Broad Branch Road	Grant	Brandywine	500	600	500	-16.7%	700	16.7%	600	600	600	0.0%	700	16.7%
Connecticut Avenue	DC line	McKinley	3,100	3,300	3,400	0.0%	3,700	2.8%	3,400	3,600	3,300	-2.9%	3,700	2.8%
Connecticut Avenue	Nebraska	36th	3,200	3,400	3,600	0.0%	3,900	2.6%	3,600	3,800	3,300	-8.3%	3,800	0.0%
Connecticut Avenue	Macomb	Cathedral	3,100	3,300	3,800	5.6%	4,100	7.9%	3,600	3,800	3,200	-11.1%	3,700	-2.6%
Connecticut Avenue	Columbia	Florida	3,100	3,300	3,700	5.7%	3,800	2.7%	3,500	3,700	4,100	17.1%	4,000	8.1%
Connecticut Avenue	18th St	Dupont Circle	2,100	2,200	2,400	9.1%	2,500	4.2%	2,200	2,400	2,600	18.2%	2,500	4.2%
Wisconsin Avenue	Albemarle	Nebraska	2,500	2,600	2,700	-3.6%	3,000	3.4%	2,800	2,900	2,900	3.6%	3,100	6.9%
Wisconsin Avenue	Porter	Newark	2,400	2,600	2,800	3.7%	2,900	3.6%	2,700	2,800	2,900	7.4%	3,000	7.1%
Wisconsin Avenue	Calvert	Reservoir	2,300	2,500	2,400	-4.0%	2,700	0.0%	2,500	2,700	2,600	4.0%	2,900	7.4%
Wisconsin Avenue	O St	P St	1,700	1,700	1,900	0.0%	1,900	0.0%	1,900	1,900	1,900	0.0%	1,900	0.0%
Massachusetts Avenue	DC line	49th St	2,100	2,100	2,400	4.3%	2,300	0.0%	2,300	2,300	2,500	8.7%	2,400	4.3%
Massachusetts Avenue	Macomb	Idaho	2,800	2,800	3,000	0.0%	3,000	0.0%	3,000	3,000	3,000	0.0%	3,100	3.3%
Massachusetts Avenue	Garfield	34th St	3,900	3,900	4,300	4.9%	4,100	0.0%	4,100	4,100	4,300	4.9%	4,200	2.4%
Massachusetts Avenue	24th St	Sheridan Circle	2,100	2,100	2,400	4.3%	2,300	0.0%	2,300	2,300	2,400	4.3%	2,500	8.7%
Massachusetts Avenue	Sheridan Circle	Florida	2,500	2,500	2,800	3.7%	2,700	0.0%	2,700	2,700	2,700	0.0%	2,900	7.4%
Massachusetts Avenue	17th St	18th St	1,800	1,800	1,900	0.0%	1,800	-5.3%	1,900	1,900	1,900	0.0%	2,000	5.3%
Nebraska Avenue	Oregon	Utah	500	500	700	16.7%	700	16.7%	600	600	700	16.7%	700	16.7%
Nebraska Avenue	Nevada	Military	2,000	2,000	2,200	0.0%	2,200	0.0%	2,200	2,200	2,200	0.0%	2,200	0.0%
Nebraska Avenue	Reno	Albemarle	1,700	1,700	2,000	5.3%	1,900	0.0%	1,900	1,900	2,000	5.3%	2,000	5.3%
Nebraska Avenue	Van Ness	Massachusetts	1,900	1,900	2,000	-4.8%	2,100	0.0%	2,100	2,100	2,100	0.0%	2,100	0.0%
Military Road	Nebraska	32nd St	1,700	1,700	1,800	-5.3%	1,900	0.0%	1,900	1,900	1,800	-5.3%	1,900	0.0%
Military Road	Oregon	Beach	2,600	2,400	2,700	-6.9%	2,600	-3.7%	2,900	2,700	2,700	-6.9%	2,700	0.0%
Military Road	16th St	14th St	2,200	2,000	2,300	-8.0%	2,300	0.0%	2,500	2,300	2,500	0.0%	2,500	8.7%
West Beach	Beach	Portal	1,000	1,300	1,000	-23.1%	1,500	-6.3%	1,300	1,600	900	-30.8%	1,200	-25.0%
Wise Road	Oregon	Beach	1,000	1,100	1,100	0.0%	1,300	0.0%	1,100	1,300	1,100	0.0%	1,400	7.7%
Sherrill Drive	Beach	16th St	200	300	700	16.7%	700	-12.5%	600	800	200	-66.7%	200	-75.0%
Bingham Drive	Oregon	Beach	100	100	200	0.0%	200	0.0%	200	200	200	0.0%	200	0.0%
Joyce Road	Morrow	16th St	100	100	100	0.0%	100	-50.0%	100	200	0	-100.0%	0	-100.0%
Morrow	Joyce	Carter-Barron	200	200	600	50.0%	400	0.0%	400	400	300	-25.0%	100	-75.0%
Kennedy	14th St	13th St	600	600	700	-12.5%	800	0.0%	800	800	700	-12.5%	700	-12.5%
Blagden Avenue	Beach	Upshur	500	600	800	0.0%	800	-11.1%	800	900	800	0.0%	900	0.0%
Blagden Avenue	Upshur	Decatur	400	400	600	0.0%	600	-14.3%	600	700	700	16.7%	800	14.3%
Piney Branch Pkwy	Beach	16th St	1,200	800	1,000	-23.1%	800	-11.1%	1,300	900	1,400	7.7%	900	0.0%
Tilden Street	Linnean	Beach	700	700	900	12.5%	800	0.0%	800	800	800	0.0%	900	12.5%
Park Road	Beach	Piney Branch	800	900	900	0.0%	1,000	0.0%	900	1,000	900	0.0%	1,100	10.0%
Porter Street	Connecticut	Klingbe	1,300	1,300	1,400	0.0%	1,500	7.1%	1,400	1,400	1,400	0.0%	1,500	7.1%
Adams Mill Road	Park	Irving	800	800	800	-11.1%	800	-11.1%	900	900	700	-22.2%	900	0.0%
Harvard Street	Adams Mill	16th St	400	400	500	0.0%	500	0.0%	500	500	500	0.0%	500	0.0%
Zoo Main Rd	Connecticut	Zoo	200	300	400	33.3%	400	33.3%	300	300	200	-33.3%	400	33.3%
Cathedral Avenue	Calvert	Beach / 24th	1,200	1,300	700	-50.0%	1,600	14.3%	1,400	1,400	1,200	-14.3%	1,100	-21.4%
24th / Calvert access	24th / Calvert	Beach	2,200	2,000	3,500	25.0%	3,400	30.8%	2,800	2,600	2,200	-21.4%	2,100	-19.2%
M Street	30th St	Pennsylvania	3,300	3,700	3,700	0.0%	4,100	-2.4%	3,700	4,200	3,700	0.0%	4,100	-2.4%
M Street	New Hampshire	22nd St	1,600	1,800	1,700	0.0%	2,000	5.3%	1,700	1,900	1,800	5.9%	2,100	10.5%
New Hampshire Avenue	19th St	20th St	800	900	1,000	0.0%	1,100	0.0%	1,000	1,100	1,300	30.0%	1,400	27.3%
New Hampshire Avenue	21st St	M St	800	900	900	0.0%	1,000	0.0%	900	1,000	600	-33.3%	1,500	50.0%
New Hampshire Avenue	Washington Circle	Virginia	500	500	600	20.0%	600	0.0%	500	600	800	60.0%	700	16.7%
Pennsylvania Avenue	M St	L St	2,400	2,600	2,700	0.0%	2,800	-3.4%	2,700	2,900	2,500	-7.4%	3,000	3.4%
Pennsylvania Avenue	K St	I St	1,800	2,000	2,100	0.0%	2,200	0.0%	2,100	2,200	2,000	-4.8%	2,200	0.0%
Virginia Avenue	New Hampshire	23rd St	1,100	1,300	1,100	-8.3%	1,300	-7.1%	1,200	1,400	900	-25.0%	1,000	-28.6%
Constitution Avenue	23rd St	Henry Bacon	3,400	3,200	3,900	2.6%	3,600	2.9%	3,800	3,500	4,100	7.9%	3,500	0.0%

*Note: % Change shown represents the difference between the selected alternative and Alternative B (Continued Current Management) in the year 2020.

TABLE G.3
MATRIX 3: LEVEL OF SERVICE ANALYSIS*

ROADWAY LINK RESULTS										
Roadway	From To		1990 LOS		2020 LOS					
			AM	PM	Alt A		Alt B		Alt C	
					AM	PM	AM	PM	AM	PM
Beach Drive	Wyndale	W Beach	A	B	C	C	C	C	--	--
Beach Drive	Wise	Sherrill	B	B	C	C	C	D	--	--
Beach Drive	Bingham	Joyce	B	B	B	C	B	C	A	A
Beach Drive	Joyce	Broad Branch	B	B	A	B	B	C	--	--
Beach Drive	Blagden	Tilden / Park	C	E	C	E	D	F	C	E
Beach Drive	Porter	Zoo	D	E	B	C	E	F	C	E
Beach Drive	Zoo	24th / Cathedral	D	E	B	C	E	F	E	E
RCPW SB	24th / Cathedral	Waterside NB on	C	--	C	--	D	--	C	C
RCPW NB	24th / Cathedral	Waterside NB on	--	C	--	C	--	D	C	C
RCPW SB	Waterside ramps	P ramps	D	--	D	--	E	--	D	D
RCPW NB	Waterside ramps	P ramps	--	D	--	E	--	E	D	E
RCPW SB	K / Whitehurst	Virginia	C	--	C	--	D	--	B	E
RCPW NB	K / Whitehurst	Virginia	--	C	--	E	--	E	D	D
RCPW SB	Virginia	Teddy Roosevelt Br	C	--	C	--	C	--	C	D
RCPW NB	Virginia	Teddy Roosevelt Br	--	C	--	C	--	C	C	D
16th Street	DC line	S Portal	D	D	D	D	D	D	D	D
16th Street	Alaska	Sherrill	E	E	D	D	D	D	D	D
16th Street	Missouri	Kennedy	D	D	D	D	D	D	D	D
16th Street	Kennedy	Colorado	C	C	D	D	D	D	D	D
16th Street	Park	Irving	D	D	D	D	D	D	D	D
16th Street	Euclid	Florida	D	D	D	D	D	D	D	D
Alaska Avenue	Georgia	Morningside	B	B	C	C	C	C	C	C
Georgia Avenue	Alaska	Fern	E	E	E	E	E	E	E	E
Georgia Avenue	Dahlia	Aspen	D	D	E	E	E	E	E	E
Georgia Avenue	Missouri	Kennedy	C	C	E	E	D	D	E	E
Georgia Avenue	Arkansas	Upshur	C	C	D	D	E	E	D	D
Oregon Avenue	Western	Wise / Chesnut	A	A	A	A	A	A	A	A
Oregon Avenue	Chesnut	Nebraska	C	C	C	C	D	C	C	C
Oregon Avenue	Moreland	Military	A	A	A	A	A	A	A	B
Glover Road	Military	Grant	A	A	A	A	A	A	A	A
Grant Road	Glover	Broad Branch	A	A	A	A	A	A	A	A
Glover Road	Ross	Broad Branch	A	A	A	A	A	A	A	A
Ross Drive	Glover	Joyce	C	C	C	C	C	C	C	C
Broad Branch Road	Western	McKinley	A	A	A	A	A	A	A	A
Broad Branch Road	32nd St	27th St	A	A	A	A	A	A	A	A
Broad Branch Road	Grant	Brandywine	B	B	B	B	B	B	B	B
Connecticut Avenue	DC line	McKinley	D	D	D	D	D	D	D	D
Connecticut Avenue	Nebraska	36th	D	D	D	D	D	D	D	D
Connecticut Avenue	Macomb	Cathedral	E	E	E	E	E	E	E	E
Connecticut Avenue	Columbia	Florida	D	D	D	D	D	D	D	D
Connecticut Avenue	18th St	Dupont Circle	C	C	C	C	C	C	C	C
Wisconsin Avenue	Albemarle	Nebraska	D	E	E	E	E	E	E	E
Wisconsin Avenue	Porter	Newark	D	E	E	E	E	E	E	E
Wisconsin Avenue	Calvert	Reservoir	D	D	D	E	D	E	E	E
Wisconsin Avenue	O St	P St	C	C	C	C	C	C	C	C
Massachusetts Avenue	DC line	49th St	D	D	D	D	D	D	D	D
Massachusetts Avenue	Macomb	Idaho	E	E	E	E	E	E	E	E
Massachusetts Avenue	Garfield	34th St	F	F	F	F	F	F	F	F
Massachusetts Avenue	24th St	Sheridan Circle	D	D	D	D	D	D	D	D
Massachusetts Avenue	Sheridan Circle	Florida	D	D	E	E	E	E	E	E
Massachusetts Avenue	17th St	18th St	C	C	C	C	C	C	C	C
Nebraska Avenue	Oregon	Utah	B	B	B	B	B	B	B	B
Nebraska Avenue	Nevada	Military	D	D	D	D	D	D	D	D
Nebraska Avenue	Reno	Albemarle	D	D	D	D	D	D	D	D
Nebraska Avenue	Van Ness	Massachusetts	D	D	D	D	D	D	D	D

TABLE G.3 (Continued)
MATRIX 3: LEVEL OF SERVICE ANALYSIS*

ROADWAY LINK RESULTS										
Roadway	FromTo		1990 LOS		2020 LOS					
					Alt A		Alt B		Alt C	
					AM	PM	AM	PM	AM	PM
Military Road	Nebraska	32nd St	C	C	C	C	C	C	C	C
Military Road	Oregon	Beach	E	D	E	E	E	E	E	E
Military Road	16th St	14th St	D	C	D	D	D	D	E	E
West Beach	Beach	Portal	C	E	C	E	E	F	C	E
Wise Road	Oregon	Beach	C	D	D	E	D	E	D	E
Sherrill Drive	Beach	16th St	A	A	B	B	B	C	--	--
Bingham Drive	Oregon	Beach	A	A	A	A	A	A	--	--
Joyce Road	Morrow	16th St	A	A	A	A	A	A	A	A
Morrow	Joyce	Carter-Barron	A	A	B	A	A	A	A	A
Kennedy	14th St	13th St	B	B	B	C	C	C	B	B
Blagden Avenue	Beach	Upshur	B	B	C	C	C	C	C	C
Blagden Avenue	Upshur	Decatur	A	A	B	B	B	B	B	C
Piney Branch Pkwy	Beach	16th St	D	C	C	C	E	C	E	C
Tilden Street	Linnean	Beach	C	C	D	D	D	D	D	D
Park Road	Beach	Piney Branch	D	D	D	D	D	D	D	E
Porter Street	Connecticut	Klingde	D	D	D	D	D	D	D	D
Adams Mill Road	Park	Irving	C	C	C	C	C	C	B	C
Harvard Street	Adams Mill	16th St	A	A	B	B	B	B	B	B
Zoo Main Rd	Connecticut	Zoo	A	A	A	A	A	A	A	A
Cathedral Avenue	Calvert	Beach / 24th	D	E	B	F	E	E	D	D
24th / Calvert access	24th / Calvert	Beach	F	F	F	F	F	F	F	F
M Street	30th St	Pennsylvania	F	F	F	F	F	F	F	F
M Street	New Hampshire	22nd St	C	C	C	C	C	C	C	D
New Hampshire Avenue	19th St	20th St	C	C	C	D	C	D	E	E
New Hampshire Avenue	21st St	M St	C	C	C	C	C	C	B	E
New Hampshire Avenue	Washington Circle	Virginia	B	B	B	B	B	B	C	B
Pennsylvania Avenue	M St	L St	D	E	E	E	E	E	D	E
Pennsylvania Avenue	K St	I St	C	C	D	D	D	D	C	D
Virginia Avenue	New Hampshire	23rd St	B	B	B	B	B	B	B	B
Constitution Avenue	23rd St	Henry Bacon	F	F	F	F	F	F	F	F

* This analysis provides a general indication of the level of service provided on the corridors within the study area based on volume versus capacity relationships for each roadway. Certain assumptions were made about the volume distributions and lane use during peak hour periods. For the purposes of this analysis, the following volume/capacity relationships were used: LOS A= 0-28%, LOS B= 29-47%, LOS C= 48-66%, LOS D= 67-79%, LOS E= 80-100%, LOS F= 100+%.

Adjustment factors for lane capacity includes adjustments for signalized areas, trucks, buses, access points, grades, lane width, turning vehicles, and on-street parking.

APPENDIX H – SUMMARY OF TRAFFIC MODELING METHODOLOGY

INTRODUCTION

The National Park Service is in the process of producing a General Management Plan (GMP) and an environmental impact statement for Rock Creek Park. During the course of the GMP process a variety of alternatives were developed and analyzed. In order to conduct a through analysis it was necessary to develop a traffic model for Rock Creek Park that would forecast traffic conditions within the study area. The model was used to analyze the traffic impacts of the various alternatives considered in the GMP.

The Metropolitan Washington Council of Governments (MWCOC) is the agency in the Washington, D.C. area that is responsible for regional planning and traffic modeling. The MWCOC regional transportation model was used as the basis for the Rock Creek Park transportation model used to evaluate roadway system alternatives considered in the GMP for the Park. It was necessary to modify the MWCOC regional model to improve the detail and accuracy of the model in the study area and to allow evaluation of the alternatives being considered in this project.

MWCOC REGIONAL TRANSPORTATION MODEL

The MWCOC transportation model files, network plots and supporting documentation were obtained from MWCOC in September, 1996. This model utilizes the MINUTP microcomputer software package (version 93B) developed by Comsis Corporation (currently maintained by the Seiders Group). The model has been developed for several target years, including 1990, 2000, 2010 and 2020. Data on years other than even decades were not available. The MWCOC model has been developed and validated for regional studies and regional air quality analysis, not subregional or corridor studies such as the Rock Creek Park project.

The area covered by the MWCOC includes approximately 4,000 square miles and 12 principal jurisdictions within the Washington, D.C. metropolitan area. These jurisdictions include Washington, D.C. and these surrounding counties: Montgomery, Prince Georges, Charles, Anne Arundel, Howard, and Frederick in Maryland, and Arlington, Alexandria, Fairfax, Loudoun, and Prince William in Virginia.

The roadway network used in the MWCOC model contains over 9,000 links and 6,000 nodes. Existing and proposed HOV lanes for the metropolitan area are included in these networks. The MWCOC model includes 293 districts and 1,478 zones within those districts. Trip generation and trip distribution calculations are performed at the district level, while mode choice and all traffic assignment calculations are performed at the zone level. Zone sizes are typically smaller in the center of the model area (i.e. - Washington, D.C.) and become larger as the zones are located farther out in the Maryland and Virginia suburban counties.

Growth Factors

The current version of land use forecasts, Round 5.3 Cooperative Forecast, reflects the latest estimates of regional job and household growth as agreed upon by local planning agencies around

the region. The regional growth forecasts used by MWCOC for the years 2000, 2010, and 2020 were applied to the Rock Creek Park model to predict traffic in those future years.

Trip Generation

Trip generation calculations are applied at the district level. Productions and attractions are calculated for each district by the following six trip purposes: home based work (HBW), home based shop (HBS), home based other (HBO), non-home based (NHB), medium truck and heavy truck. Miscellaneous trips such as taxi, school, tourist and through trips are estimated separately based on growth factored survey-based trip tables and added later in the model run. All purposes are in vehicle trips except HBW, which is in units of person trips.

Trip Distribution

The trip distribution step utilizes the standard gravity model to develop district level trip tables from productions and attractions calculated in trip generation. While most districts use a base set of friction factors to distribute trips, there are some districts with unique travel characteristics (such as airports and external districts) which utilize different sets of friction factors for trip distribution.

Mode Choice

In the MWCOC model, mode choice currently allocates HBW person trips among motorized travel choices. HBW person trips from trip distribution are split from district to zone level prior to mode choice. Mode choice calculates the number of persons traveling in single occupancy vehicles (SOV) and in high-occupancy vehicles (HOV), walk-access transit, auto-access transit, HOV auto-driver and HOV auto-person trip tables. In these tables, HOV represents all persons actually using HOV lanes, while low-occupancy vehicles (LOV) represents all persons using LOV lanes. This mode choice is only performed once during the base run, and only includes HBW trips. Trips for all other purposes are not included in this mode choice procedure.

Traffic Assignment

Traffic assignment involves a four iteration incremental capacity restraint procedure for loading trips to the network. The loading of each iteration is equal (25% of the trip table), and the path building algorithm weights time and distance equally. The model assigns all trips on a daily basis, assuming a peak-hour factor of 10 percent on all links for capacity calculations except the Beltway (8 percent) and a few other unique roadways such as HOV facilities. Thus, there are no peak period assignments in the MWCOC model.

MODIFICATIONS MADE TO MWCOC MODEL TO CREATE THE ROCK CREEK PARK MODEL

Because the MWCOC regional model only includes the major arterial road network, it was necessary to make additions to roadway network within the study area to include all of the roads within the Park and numerous local city streets near the Park. It was also necessary to develop AM peak period, PM peak period, and OFF peak period trip tables to enable full impact analysis

of the alternatives. It was also necessary to develop High-occupancy Vehicle (HOV) trip tables by trip purpose and by peak period to allow analysis of alternatives that include HOV operation during peak periods.

The model was validated using actual ground count volumes from the year 1990 that were collected by the National Park Service and D.C. Department of Public Works.

As stated above, the MWCOG model has been primarily developed and validated for regional traffic studies and air quality analysis, not subregional or corridor studies such as the Rock Creek Park project. In order to effectively evaluate impacts of project alternatives within the Rock Creek study area, significant modifications to the original MWCOG model were included in the development of the Rock Creek Park (RCP) model. Due to these changes, RCP model results cannot be directly compared to results from the MWCOG model. However, the RCP model has a significantly improved correlation between model results and existing ground counts within the project study area relative to the MWCOG original model. These RCP model volumes are then adjusted in the RCP adjustment spreadsheet.

The following types of modifications to the MWCOG model were included in the development of the RCP model:

- additions and modifications to roadway network within the study area, including better spatial representation of Beach Drive, Rock Creek and Potomac Parkway and other roadways, new local roadways added to the network, relocation of some centroids within their zonal boundaries, addition and relocation of some centroid connectors, and speed and capacity changes along some roadway links

- development of AM peak period, PM peak period, and OFF peak period roadway networks and traffic assignment procedures, with the sum of these peak period assignment results representing an ADT assignment

- development of LOV, HOV-2, HOV-3 trip tables by trip purpose and by peak period to allow analysis of HOV-2 conditions during peak periods along Beach Drive

- use of adjustment spreadsheets for the following purposes: adjust future year model link volumes based on existing (1990) model volume to ground count error, include peak-hour spreading for future year model runs, and present output data in tabular format by roadway and by screenline for improved comparison and analysis

ROCK CREEK PARK TRAFFIC MODEL

The following sections describe the RCP model, with emphasis on the modifications made to the MWCOG model.

Modeling Area

The whole modeling area was retained, even though the project study area was mostly contained within the western half of Washington, D.C. Model run times were not excessively long to justify the effort to reduce the size of the model area.

Land Use / Trip Generation

There was no modification to the MWCOG zone system, land use data or trip generation procedures or results. Thus, it is assumed that project alternatives do not change the number of trips made in any zone.

Highway Networks

Outside of the project study area, all network data remains identical to original MWCOG model area data. Numerous modifications were made to the MWCOG roadway network within the RCP study area. Generally, the project study area boundaries are the Wisconsin Avenue / Foxhall Road alignment to the west, East - West Highway (Rte 410) to the north, the George Mason / 14th Street Bridge to the south, and North Capitol Street to the east.

Trip Distribution

The RCP model keeps trip tables constant for each project alternative being analyzed within any future target year. Trip distribution results from the MWCOG model were utilized for this project. It is assumed that project alternatives do not change the origin and destination of any trips; only the travel paths calculated in traffic assignment can change due to a project alternative. Therefore, the trip tables calculated in the MWCOG action model runs for each target year were used for all RCP model runs.

Mode Choice

The RCP model uses the results of the MWCOG mode choice steps, which estimate LOV auto drivers, LOV auto persons, walk-access transit, auto-access transit, HOV auto-driver and HOV auto-person trip tables for the HBW trip purpose. In these mode choice steps, HOV is defined as HBW persons or drivers actually using an HOV facility included in the MWCOG model, while LOV represents all other HBW persons or vehicles. Note that the MWCOG model only calculates HBW trips which access transit facilities or utilize HOV facilities.

To estimate usage of HOV lanes along Beach Drive, the RCP model utilizes the MWCOG post-mode choice procedure. This procedure estimates LOV auto driver and LOV auto person trip tables by auto occupancy. For the RCP model, SOV, HOV-2 and HOV-3 trip tables were calculated for each trip purpose. MWCOG currently has no available data for auto occupancy by trip purpose in the Washington, D.C. region. Therefore, consultant estimates of average auto occupancy for each trip purpose were utilized based on data collected within the project study area during this study as well as data from other similar urban areas.

Time of Day Trip Table Calculations

As described above, the RCP model performs a post-mode choice procedure to calculate trip tables by auto occupancy. These trip tables are then stratified by period of the day to allow analysis of project alternatives involving peak period roadway network changes. The MWCOG has no available data regarding time of day (TOD) factors for trips by trip purpose (for example, the percentage of daily HBW trips which occur during the AM peak period). Therefore, the consultant compiled available data for other similar urban areas and estimated these TOD factors for each

trip purpose in the MWCOG model. These TOD factors were used to estimate trip tables by trip purpose for the AM peak period (3 hours), the PM peak period (3 hours), and the OFF peak period (18 hours).

Traffic Assignment

Following are the primary changes in the RCP model traffic assignment procedure relative to the MWCOG model:

The RCP model performs separate traffic assignments for the AM, PM and OFF peak periods, and adds the volumes of these three runs to produce ADT model volumes. These three period assignment procedures are identical except for the peak-hour percent of peak period factors as described below. In contrast, the MWCOG model performs one ADT traffic assignment.

Each RCP assignment includes a ten iteration incremental capacity restraint procedure, with each iteration loading 10% of the trip table. The MWCOG assignment procedure includes four iteration incremental capacity restraint procedure, with each iteration loading 25 percent of the trip table. It was observed that the four iteration assignment procedure used by MWCOG occasionally overloaded some minor streets within the project study area; the ten iteration procedure improved results along these minor roadways.

Adjustment Spreadsheet

The 1990 (existing conditions) RCP model link volumes are significantly closer to existing ground counts within the study area than MWCOG model link volumes. However, there is still much error along many links within the study area. Therefore, a spreadsheet was developed which adjusts all future year model results by adding / subtracting this inherent error to each link being analyzed. The same link adjustments are applied to all model run results. This adjustment procedure provides much more reasonable estimates of future link volumes, as known existing year model error is removed.

Air Quality Analysis

Model volumes calculated by the RCP model and adjusted with the adjustment spreadsheet are being utilized for most analytical purposes, including local or hot-spot air quality analysis. However, only selected links are included and adjusted in the adjustment spreadsheet. Regional air quality analysis, which must include all links within a specified geographic area, will use link volumes directly from the RCP model output before adjustment by adjustment spreadsheet. This unadjusted model output includes the same level of traffic diversion along all roadways due to project alternatives, so the relative impact of project alternatives on air quality can be calculated.

Agency Support

In addition to model computer files, MWCOG provided network plots and supporting documentation which were utilized throughout the development of the RCP model. Additionally, the District of Columbia Department of Public Works provided current and historic traffic count maps and count data. These maps and counts were utilized throughout this project.

Model Limitations

The following limitations have been identified about the RCP model:

Due to the nature of the model, it was not practical to attempt to model local roadways which carry very low traffic volumes. In order to model these low volume roadways, zones sizes would have to be greatly reduced and many more roadways would have to be included.

Neither the MWCOG model nor the RCP model provide any data relating to bicycle or pedestrian trips.

The data relating to the use of Metrorail and Metrobus is very limited and considered to be of little use in the analysis of alternatives.

The model does not provide any data on possible mode shifts that would result from a particular alternative.

TRAFFIC MODEL VALIDATION

The traffic model used in the EIS traffic impact analysis was developed in 1996 using the Metropolitan Washington Council of Governments (MWCOG) regional traffic model. The model was developed by MWCOG in the early 1990's and calibrated using 1990 ground traffic count data. The MWCOG model was modified by Robert Peccia & Associates (RPA) to provide more model sensitivity in the vicinity of the Park and within the study area of the EIS. This revised model was also calibrated using 1990 traffic count data provided by the Washington D.C. Department of Public Works.

It is essential that the model used to assess the traffic impacts of the various alternatives being considered be accurate enough for this purpose. In an effort to assess the current validity of the model it was necessary to compare current traffic counts with the model results for the same year. The most current traffic counts available from the Washington D.C. Department of Public Works were for the year 1999. These actual traffic counts were compared to traffic volumes generated by the model for the year 1999.

The traffic growth projections included in the model were used to estimate 1999 traffic volumes. RPA then compared actual traffic counts at 40 locations within the vicinity of the study area with the model results. The results of this analysis are presented in table H.1.

The data in table H.1 indicates that the actual overall trends in traffic volumes in the area of Rock Creek Park have not increased as much as the model predicted. It is not unreasonable to expect a traffic model to vary somewhat from actual growth trends. The MWCOG growth trends used to project traffic were based on a variety of factors including the anticipated growth of residential and commercial developments within the region. On average the model is projecting traffic volumes that are about 5% greater than the actual ground counts. The modeled traffic volumes for individual streets ranged from 22% less than the actual volume to 23% more than the actual traffic counts. In 24 of the 40 locations examined the actual volumes were within 10% of the modeled results. In 34 of the 40 locations the actual and modeled volumes were within 15% of each other. Considering the wide variety of social and economic variables that determined the growth

within the area between 1990 and 1999, the differences in traffic volumes are not considered unusual.

TABLE H.1: TRAFFIC VALIDATION SUMMARY

Roadway	From	To	1999 Actual Volumes (Thousands)	1999 Model Volumes (Thousands)	% Difference Be- tween Modeled and Actual Vol- umes
Beach Drive	Joyce	Broad Branch	12.5	9.8	-21%
Beach Drive	Porter	Zoo	25.0	26.9	8%
Rock Creek and Potomac Parkway southbound	Virginia	Teddy Roosevelt Br	24.1	21.8	-9%
Rock Creek and Potomac Parkway northbound	Virginia	Teddy Roosevelt Br	24.1	22.8	-5%
16th Street	Missouri	Kennedy	32.2	35.3	10%
16th Street	Park	Irving	33.8	34.5	2%
Georgia Avenue	Alaska	Fern	31.5	31.5	0%
Georgia Avenue	Missouri	Kennedy	22.7	24.9	10%
Georgia Avenue	Park	Kenyon	21.0	22.6	7%
Oregon Avenue	Chestnut	Nebraska	9.0	9.0	0%
Connecticut Avenue	D.C. line	McKinley	35.9	38.6	8%
Connecticut Avenue	Macomb	Cathedral	33.0	39.9	21%
Reno Road / 34th Street	Macomb	Woodley	16.7	17.7	6%
Massachusetts Avenue	Macomb	Idaho	30.5	34.6	13%
Adams Mill Road	Park	Irving	10.6	10.2	-4%
New Hampshire Avenue	21st St	M St	9.7	10.7	10%
Virginia Avenue	New Hampshire	23rd St	12.8	14.3	11%
23rd Street	N St	P St	20.0	15.6	-22%
19th Street	E St	Pennsylvania	16.1	16.6	3%
18th Street	E St	Pennsylvania	16.9	17.5	4%
Connecticut Avenue	18th St	Dupont Circle	30.2	28.8	-5%
Massachusetts Avenue	17th St	18th St	26.2	23.2	-12%
17th Street	Massachusetts	P St	7.8	9.2	17%
16th Street	Scott Circle	P St	17.2	21.1	23%
14th Street	Irving	New Hampshire	21.4	23.1	8%
Wisconsin Avenue	Newark	Woodley	29.2	31.7	9%
Connecticut Avenue	Jennifer	Military	35.9	40.1	12%
Nevada Avenue	Nebraska	Military	5.8	6.9	18%
Nebraska Avenue	Nevada	Military	19.0	23.3	23%
13th Street	Kennedy	Missouri	18.1	20.5	13%
16th Street	Kalmia	Iris	39.0	40.1	3%

TABLE H.1: TRAFFIC VALIDATION SUMMARY (CONTINUED)

Roadway	From	To	1999 Actual Volumes (Thousands)	1999 Model Volumes (Thousands)	% Difference Be- tween Modeled and Actual Vol- umes
Utah Avenue	32nd St	Western	2.0	2.0	1%
5th Street	Missouri	Kennedy	8.4	7.6	-9%
41st Street	Western	Military	7.4	8.5	14%
Western Avenue	41st St	Military	19.7	22.4	14%
Blair Road	Piney Branch	Fern	14.2	16.4	15%
Blair Road	Piney Branch	Fern	14.2	16.4	15%
14th Street	Pennsylvania	New York	33.0	35.5	8%
13th Street	E St	G St	14.5	14.5	0%
North Capital Street	Irving	Scale Gate	36.8	37.4	2%
OVERALL TOTAL=			838.1	883.6	5%

It is important to note that traffic modeling provides the analyst with information that indicates the anticipated trends in traffic changes resulting from a particular alternative. The actual volume estimated on a particular street is not nearly as important as the relative change in traffic volumes produced as a result of the alternative. When examining the model results the most important information provided relates to the relative changes in traffic patterns and the magnitude of the volume changes. The model is used as a tool to identify where volumes are likely to increase or decrease as a result of the alternative and to estimate the general magnitude of those changes. There is no evidence that indicates that the model does not provide a reasonable assessment of the relative change in traffic volumes resulting from a particular alternative.

This validity analysis indicates that in general the model reflects a slightly greater traffic volume for the year 1999 than what actually occurred in that year. However, the impact analysis included in the GMP/EIS, which relies heavily on relative changes in traffic patterns, does provide a reasonably accurate assessment of the traffic impacts within the area resulting from the various alternatives. The slight difference between the modeled and actual volumes is considered acceptable considering that the analysis was intended to examine the alternatives using a “worst case scenario.” The model results provide a reasonable approximation of the traffic impacts that would occur with each alternative.

Based on a comparison of the most current traffic volume data with the traffic model, it is the opinion of Robert Peccia & Associates that the traffic model is still valid for the purposes of the analyzing the GMP alternatives. Although the traffic volumes projected by the model are slightly greater than the actual traffic volumes, it still is valid for use as a basis for determining possible traffic impacts. We believe that the modified MWCOG model and the analysis results contained in the GMP/EIS are valid and can be used for traffic planning efforts within the study area.



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